TECHNI-TOOL, INC.

1216 ARCH STREET, PHILADELPHIA, PENNSYLVANIA • ZIP CODE: 19107

AREA CODE (215) 568-4457 - 58, 4482 - 83 ● SPECIALISTS IN TOOLS FOR INTEGRATED CIRCUITRY

SUPPLEMENT 16-B-2

NATIONAL DISTRIBUTORS

EREM

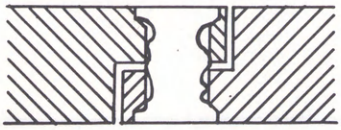
LISTED ARE THE MOST POPULAR TOOLS

THE COMPLETE RANGE OF PRODUCTS IS AVAILABLE IN OUR INVENTORY
SEE PAGES 41 TO 47 FOR PRICES AND CURRENT PRICE CHANGES
TO IMPROVE COMMUNICATIONS A TELEX LINE IS BEING INSTALLED–
PLEASE CONSULT YOUR TELEX DIRECTORY FOR OUR NEW NUMBER

SEE OUR COMPLETE CATALOG NO. 16 – A 5,000 – PLUS SELECTION OF PRODUCTS FOR ELECTRONIC ASSEMBLY AND MAINTENANCE

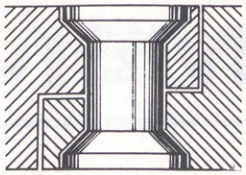
EREM® SWISS PRECISION CUTTERS

EREM'S PRECISION LAP JOINT!



ORDINARY JOINT . . . The regular rivet used in mass produced pliers normally becomes deformed during riveting action . . . Note peaks and valleys between rivet and wall of joint. This will cause loose sloppy joints after extended use.

PRECISION MACHINED PIN OFFERS EREM'S



SMOOTH ACTION

NO WOBBLE

NO OVERLAPPING

FINE MIDGET DIAGONAL CUTTER

Used for cutting 22GA and smaller wire. Small head allows maximum visibility. Available with leaf or coil spring.

NO.	OVERALL	NOSE	SPECIAL FEATURES
95 EH	4	1/2	full flush

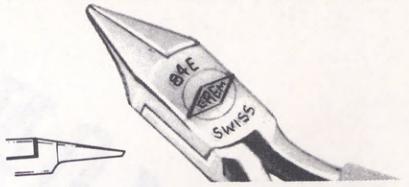
TAPERED JAW MIDGET DIAGONAL CUTTER

Leaf Spring Optional

This cutter is ideal for limited access areas, because of the small head and relieved nose. Used for cutting 22 GA and smaller wire.

NO.	OVERALL	NOSE	SPECIAL FEATURES
95a EH	4	1/2	full flush

TAPERED JAW DIAGONAL CUTTER



Jaw relieved more than 86 E to permit cutting in limited access areas. Used for cutting 20 GA or smaller wire. Leaf or coil spring optional.

NO.	OVERALL	NOSE	SPECIAL FEATURES
84EH	4-3/4	9/16	full flush

FINE DIAGONAL CUTTER

One of our most popular cutters. Will cut 22GA. and smaller soft copper wire. Leaf or coil spring optional.

NO.	OVERALL	NOSE	SPECIAL FEATURES
97EH	4	1/2	semi-flush

SUPER FINE DIAGONAL CUTTER

Leaf Spring Optional

Miniature head makes this cutter ideal for fine work, for cutting 24GA. and smaller copper wire.

NO.	OVERALL	NOSE	SPECIAL FEATURES
79EH	4	7/16	flush cut

SUPER FINE MIDGET DIAGONAL CUTTER

For use on extremely fine wire, 24GA. and smaller soft copper wire. Leaf or coil spring optional.

NO.	OVERALL	NOSE	SPECIAL FEATURES
99EH	4	7/16	flush cut

FINE MIDGET DIAGONAL

For use where space is limited. Will cut 20GA. and smaller soft copper wire. Available with leaf or coil spring.

NO.	OVERALL	NOSE	SPECIAL FEATURES
80EH	4	7/16	semi-flush

MIDGET DIAGONAL CUTTER

Leaf Spring Optional

A miniature No. 75 for use on fine work, 24GA. and smaller wire. Relieved throat for dense cutting areas.

NO.	OVERALL	NOSE	SPECIAL FEATURES
74EH	4	7/16	semi-flush

TAPERED JAW DIAGONAL CUTTER

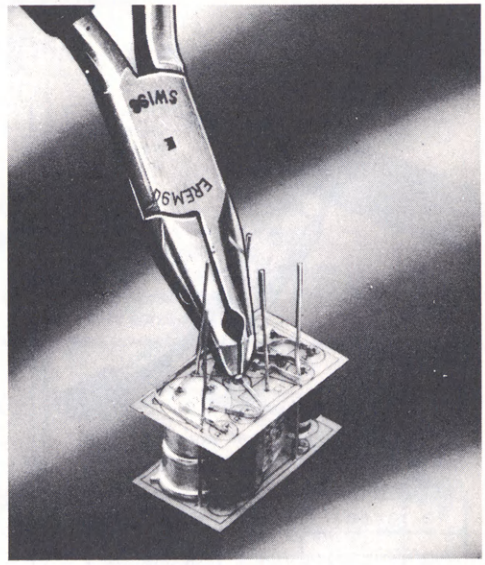
Leaf Spring Optional

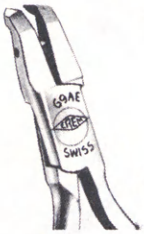
Tapered jaw enables cutting limited access areas. Used for cutting 20 GA and smaller wire.

NO.	OVERALL	NOSE	SPECIAL FEATURES
86 EH	4-3/4	9/16	full -flush

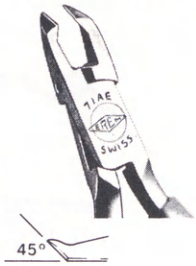
SWISS PRECISION "TIP-O-DYKES"

NEW IMPROVED DESIGNS
PERMITTING MAXIMUM VISIBILITY
SUPERIOR CUTTING PERFORMANCE



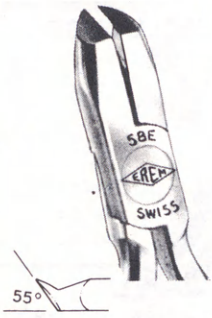


NO. 69 AEH 4½
90° TIP-O-DYKE
Used for difficult cutting areas. Alignment pin in jaw. Used to cut .010-.030 nickel ribbon, and 24GA and smaller wire. Flush cut.

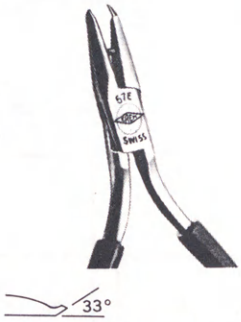


NO. 71 AEH 4½
RELIEVED JAW TIP-O-DYKE
Used to cut .010-.030 nickel ribbon, and .025 wire. Relieved jaws for cutting areas. Alignment pin for precision blade alignment. Flush cut.

NO. 90EH 4¾
TIP-O-DYKE
Ideal for module work. Used for cutting .010-.030 nickel ribbon. Maximum visibility. Tip cutting. Flush cut.



NO. 58 EH 5
HEAVY TIP-O-DYKE
A large version of our No. 90E. Used to cut any component lead wire. Jaw designed to prevent over pressure on cutting blades. Semi-flush cut.



NO. 57 EH 4
MINIATURE TIP-O-DYKE
A miniature version of our popular No. 90E. Used for extremely fine cutting. Alignment pin. For cutting .007-.015 nickel ribbon. Flush cut.

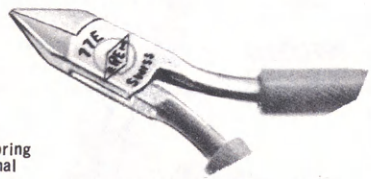
NO. 56 EH 4¼
VERTICAL TIP-O-DYKE
Used for cutting .007-.015 nickel ribbon. Jaw has alignment pin. Flush cut.

NO. 59 EH 5
MEDIUM TIP-O-DYKE
Narrow nose offers easy accessibility. Will cut standard component leads. Alignment pin for positive cutting blade alignment. Flush cut.

The Pliers listed are only the more popular types - Additional types and styles available. 10 brands to choose from.

See price list - pages 44 to 47

VERY FINE MIDGET DIAGONAL CUTTER



Leaf Spring Optional

Used for extremely fine cutting applications. Miniature head. Will cut 24 GA and smaller wire.

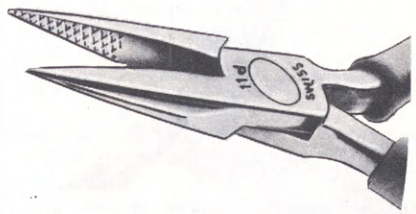
NO.	OVERALL	NOSE	SPECIAL FEATURES
77 EH	4	1/2	full flush

FINE TAPERED JAW DIAGONAL CUTTER

Used for cutting 24 GA soft copper wire. Tapered jaw for cutting in confined areas. Coil or leaf spring optional.

NO.	OVERALL	NOSE	SPECIAL FEATURES
92EH	4	1/2	full flush

11d-H SERRATED CHAIN NOSE PLIER 4¾"



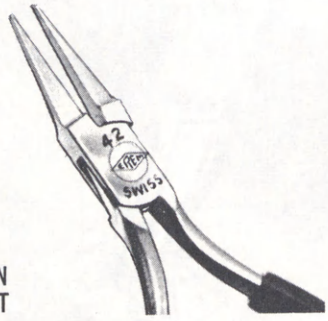
This plier has **fine crossed serrations** 48 per inch The throat depth is 1-1/8" and the serrated portion is ¾" from the tip.

SEE CATALOG #16 FOR ADDITIONAL PLIER LISTINGS

SWISS PRECISION PLIERS

The PLIERS shown are a small section of the many popular types in stock at TECHNI-TOOL. Send for complete information.

EXTRA FINE FLAT NOSE

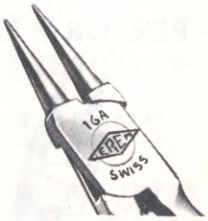


PRECISION BOX JOINT

Used for extremely fine work. Polished jaws prevent nicking and marring of wire or component lead.

NO.	OVERALL	NOSE	SPECIAL FEATURES
42H	4-1/2	1	smooth jaw

PRECISION ROUND NOSE



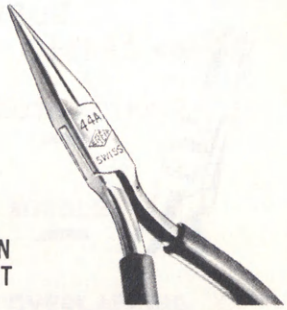
PRECISION BOX JOINT

For use in coiling or forming fine wire. Small precision ground tips. Available with leaf spring.

Coil Spring on 16AH 4½" only

NO.	OVERALL	NOSE	SPECIAL FEATURES
16aH	4	5/8	Smooth Jaws
	4-1/2	3/4	

MINIATURE HEAD CHAIN NOSE



PRECISION BOX JOINT

Extra slim chain nose for those really delicate assembly jobs. This plier has a very narrow head for maximum accessibility.

NO.	OVERALL	NOSE	SPECIAL FEATURES
44aH	4-1/2	7/8	Smooth Jaws Beveled Edges

FINE BENT NEEDLE NOSE

This long, fine, needle nose plier is excellent for assembly work in limited access areas. The smooth jaws and radiused edges, prevent nicking and marring of the wire or component being handled.

NO.	OVERALL	NOSE	SPECIAL FEATURES
14c SH	6	2	smooth jaws radius edges

BENT SERRATED NEEDLE NOSE

This plier is the same as NO. 14c with the exception that ½" of the tip has Fine Crossed Serrations. These serrations enable a positive holding action on the wire or component being held. Tool is available with or without Coil Spring.

NO.	OVERALL	NOSE	SPECIAL FEATURES
14dH	6	2	serrated jaws

45° SHORT NEEDLE NOSE

This plier has a 45° bend in the nose. The portion of the nose that is bent is ½" long. This tool is ideal for working in difficult areas. Smooth jaws and Radiused edges, prevent nicking and marring of the wire or component being handled.

NO.	OVERALL	NOSE	SPECIAL FEATURES
140H	5-1/2	1-1/2	smooth jaws radius edges

EXTRA FINE CHAIN NOSE

PRECISION BOX JOINT

Used for forming and bending in many difficult areas.

NO.	OVERALL	NOSE	SPECIAL FEATURES
29H	4-1/2	7/8	smooth jaws radius edges

60° CURVED TIP CHAIN NOSE

Another fine plier for those difficult areas. Available with leaf or coil spring.

NO.	OVERALL	NOSE	SPECIAL FEATURES
21H	4-3/4	1-1/16	smooth jaws radius edges

MINIATURE HEAD NEEDLE NOSE

PRECISION BOX JOINT

For use in really fine assembly jobs. Radius edges to prevent nicking and marring. Precision box joint.

NO.	OVERALL	NOSE	SPECIAL FEATURES
47H	4-1/2	7/8	smooth jaws radius edges

SEE CATALOG #16 FOR ADDITIONAL PLIER LISTINGS - 200 STYLES TO CHOOSE FROM IN STOCK

ALL PRICES SUBJECT TO CHANGE F.O.B. PHILADELPHIA

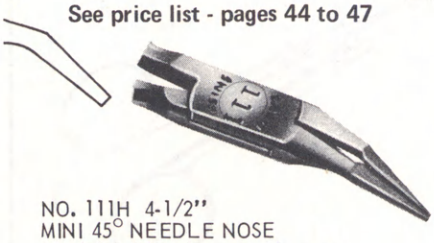
ONCE AGAIN! TECHNI-TOOL HAS MET THE CHALLENGE

MINIATURIZATION IN ELECTRONIC CIRCUITRY

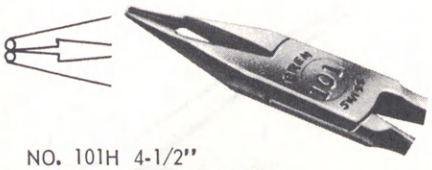
"MICROMADIUM"

PLIERS • CUTTERS • SHEAR CUTTERS

See price list - pages 44 to 47



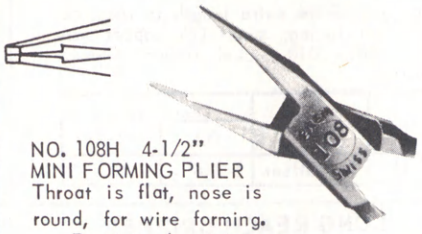
NO. 111H 4-1/2"
MINI 45° NEEDLE NOSE
Ideal for difficult assembly areas.



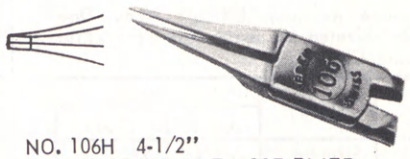
NO. 101H 4-1/2"
MINI ROUND NOSE PLIER
Ideal for wire forming and coiling. Satin smooth jaws and radius edges.

NO. 102H 4-1/2"
MINI ROUND NOSE PLIER
One small round tip and one large. For wire forming.

NO. 110H 4-1/2"
OFFSET ROUND NOSE PLIER
Satin smooth nose and jaws for no-mar wire forming.



NO. 108H 4-1/2"
MINI FORMING PLIER
Throat is flat, nose is round, for wire forming.
Precision box joint.



NO. 106H 4-1/2"
MINI FLAT NEEDLE NOSE PLIER
Excellent for precision miniature assembly applications. Satin smooth jaws and radius edges.

NO. 119H 4-1/2"
45° CHAIN NOSE TIP CUTTER
Used to cut .020 max. soft wire.
Flush cut.

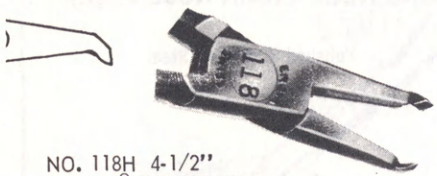
NO. 109H 4-1/2"
OFFSET NEEDLE NOSE PLIER
Needle nose and offset head for those difficult assembly areas.

NO. 103H 4-1/2"
MINI ROUND OVAL PLIER
One tip round and one oval for wire forming.

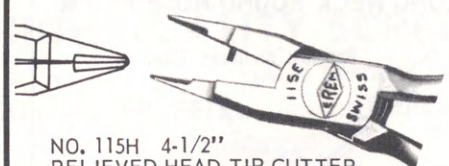
NO. 114H 4-1/2"
MINI TRANSVERSE ANVIL CUTTER
Used for horizontal cutting of .020 soft wire. One cutting blade.

NO. 120H 4-1/2"
MINI SHEAR CUTTER
A miniature shear cutter with 3/32" cut-off. Shear type cut reduces shock on componet. .020 soft wire max.

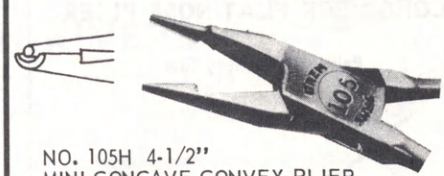
NO. 107H 4-1/2"
MINI FLAT NOSE PLIER
Flat tips, smooth jaws and radius edges. Ideal for assembly applications.



NO. 118H 4-1/2"
MINI 90° TIP CUTTER
Circumvented jaw. Used to cut .020 soft wire. Flush cut.

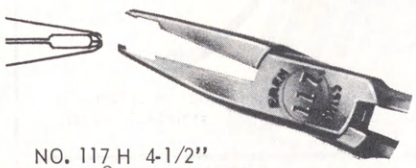


NO. 115H 4-1/2"
RELIEVED HEAD TIP CUTTER
For use in limited access areas. Will cut .020 max. soft wire. Relieved head. Flush cut.



NO. 105H 4-1/2"
MINI CONCAVE CONVEX PLIER
Excellent for stress relief forming of fine wire. Smooth jaws, radius edges. Precision box joint.

NO. 116H 4-1/2"
OFFSET RELIEVED JAW TIP CUTTER
For cutting .020 max. soft wire. Relieved jaws for dense area cutting. Flush cut.



NO. 117 H 4-1/2"
MINI 45° TIP CUTTER
Will cut .020 maximum soft wire. Relieved jaw. Flush cut.

NO. 104H 4-1/2"
MINI FLAT ROUND PLIER
One tip flat and one round, for wire forming.

SEE CATALOG #16 FOR ADDITIONAL PLIER LISTINGS

ALL PRICES SUBJECT TO CHANGE F.O.B. PHILADELPHIA

SCISSORS AND SNIPS

See price list - pages 44 to 47

OFFSET SCISSOR

For use in many difficult areas. One blade serrated for positive holding while cutting. Chrome plated.

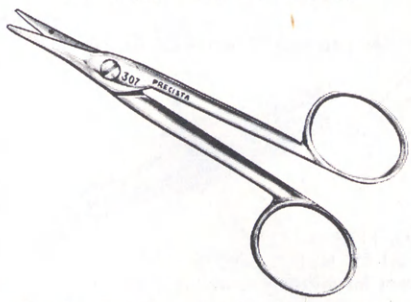
No.	Blade	Dimensions	
		O.L.	Blade
313	Straight	6-1/4"	9/16"

HIGH LEVERAGE BLADE SCISSOR

For use where extra length is required. Will cut lacing, small GA copper wire and .007–.010 nickel ribbon. Chrome plated

No.	Blade	Dimensions	
		O.L.	Blade
314	Str. Offset	6-3/4"	1"

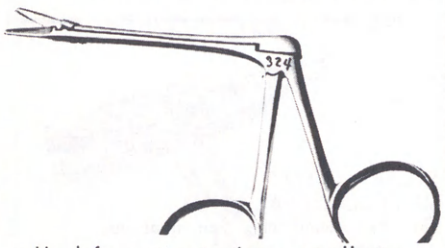
IN - AND - OUT SCISSOR



For hard wire and light sheet metal. Short triangular blades. Ideal for cutting special patterns. A strong, durable tool.

No.	Blades	Dimensions	
		O.L.	Blade
307	Straight	4 1/2"	7/8"

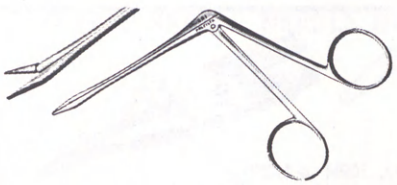
LONG REACH OFFSET SCISSOR



Used for cutting in those normally inaccessible areas. For fine cutting. Stainless steel.

No.	Blades	Dimensions	
		O.L.	Blade
324	straight	5"	1/2"
324A	straight	7"	9/16"
324B	straight	8"	3/4"
324C	straight	10"	3/4"

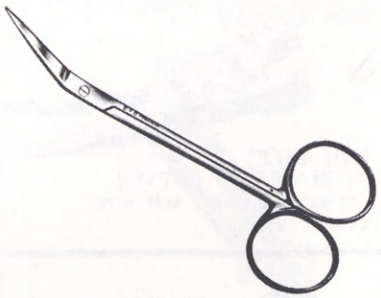
LONG REACH GRIPPER



Used to retrieve hardware from chassis, beyond the reach of ordinary tools. Stainless steel. Plastic grips optional. 18", 21" or 24" available on special order.

No.	Blade	Dimensions	
		O.L.	Blade
300	Long Nose Offset	5"	serrated
301		7"	serrated
301A		8"	serrated
301B		10"	serrated

60° ANGLE SCISSOR

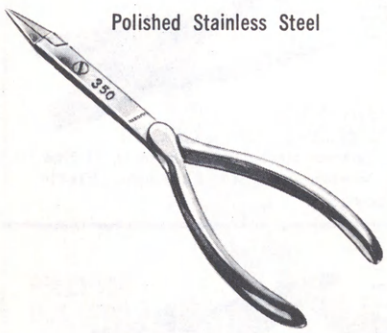


Angle of blades prevents interference of the hand with the work.

No.	Blades	Dimensions	
		O.L.	Blade
270	Angle	4 1/2"	1 1/4"

LONG NECK FLAT NOSE PLIER

Polished Stainless Steel



New design for deep area assembly application. Radiused edges. Grips optional.

No.	Blade	Dimensions	
		O.L.	Blade
350	smooth jaw	6½"	1"

LONG NECK ROUND NOSE PLIER

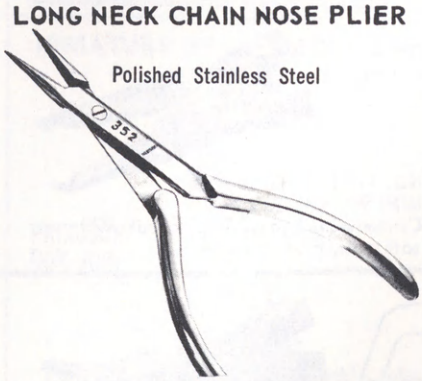
Polished Stainless Steel

Excellent for wire forming or coiling in deep areas. Polished stainless steel. Available with grips.

No.	Blade	Dimensions	
		O.L.	Blade
351	smooth jaw	6½"	1"

LONG NECK CHAIN NOSE PLIER

Polished Stainless Steel



Used for assembly applications in normally inaccessible areas. Also smooth jaws and radiused edges. Grips optional.

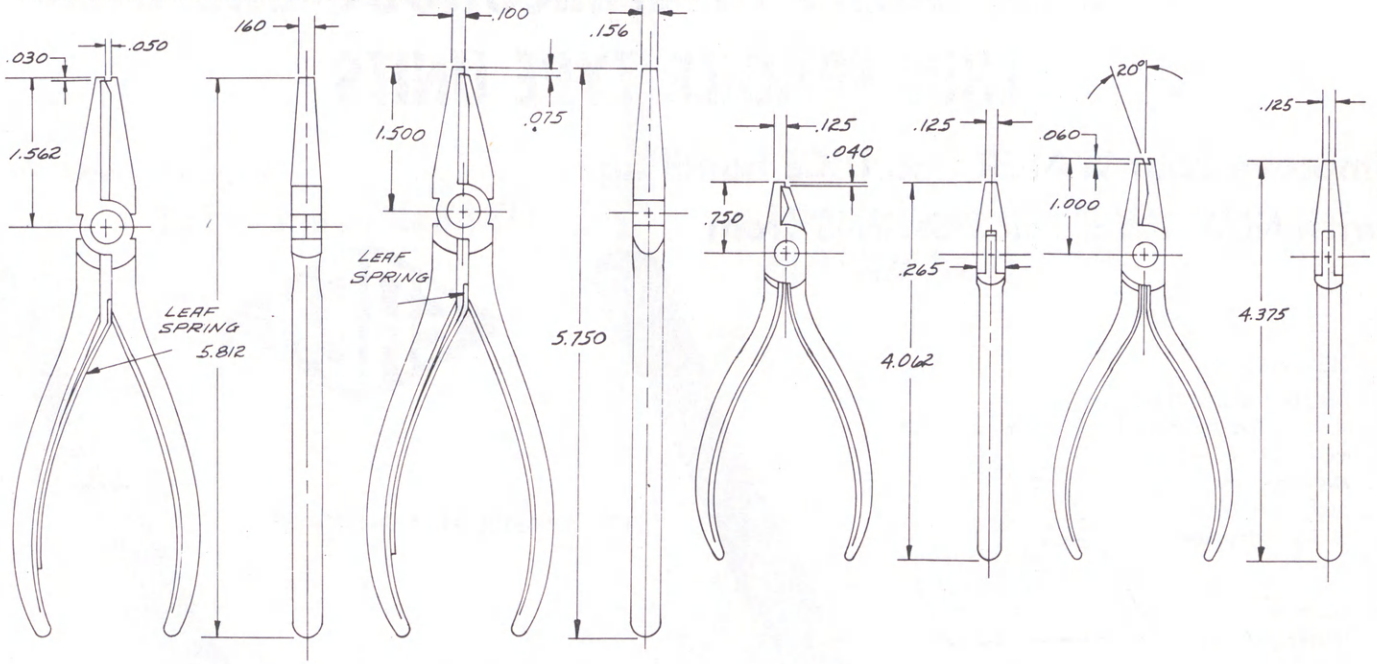
No.	Blade	Dimensions	
		O.L.	Blade
352	smooth jaw	6½"	1"

SEE CATALOG #16 - PAGES 31-35 FOR STAINLESS SCISSORS

ALL PRICES SUBJECT TO CHANGE F.O.B. PHILADELPHIA

SPECIAL TOOL SERVICE

Genuine **EREM SPECIALS** have been developed to service the complex requirements of the ever-advancing technology of the **ELECTRONIC INDUSTRY.** Each tool is either custom-crafted to your critical requirements or designed by our own skilled craftsmen. For a specific application, call **EREM** whenever your requirements need **TOOL TECHNOLOGY. NO MINIMUM - NO MAXIMUM.**



#907 L - SHEAR CUTTER & SWAGER

Cuts transistor leads, or small wires, to uniform length, and swedges the end of the lead to prevent the lead from falling out of the circuit board.

#907-1 L - LEAD SHEARING CUTTER

Assures uniformity of length of leads on circuit boards. Will not swedge the lead.

#930 - MODULE ANTI-SHOCK SHEARING CUTTER

Reduces, and in many cases eliminates shock on delicate solder connections caused by most diagonal cutters.

#930-1 - CUTTER CRIMPER

Cuts extended leads .060 from circuit board and bends the lead to a 20° angle so that the lead can then be bent flat.

See price list - pages 44 to 47

MINIATURE TRANSVERSE END CUTTER

Miniature Transverse End Cutter. Used for cutting in difficult areas.

NO.	OVERALL	NOSE	SPECIAL FEATURES
73EH	4-1/2	1	flush cut

CABLE SHEARING CUTTER

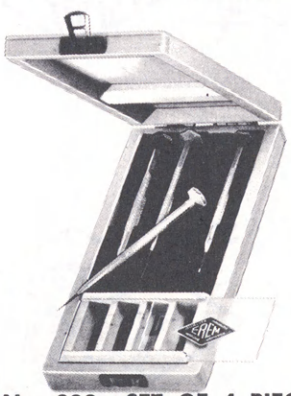
Ideal for cutting coaxial cable. Shearing action does not smash work, will cut materials up to two times heavier than our heaviest diagonal cutter.

NO.	OVERALL	NOSE	SPECIAL FEATURES
51H	6	1-3/8	Shear cut
	9	2-3/32	Shear Cut

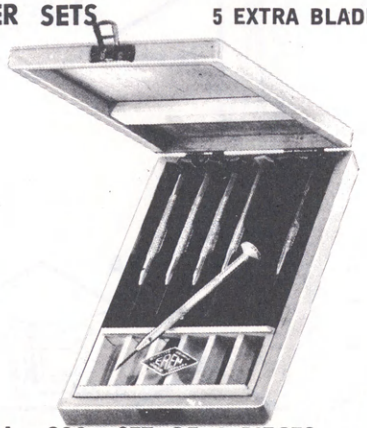
SWISS HIGH QUALITY SCREWDRIVERS

SATIN CHROME COLORED TOPS SIZES .025" TO .100"

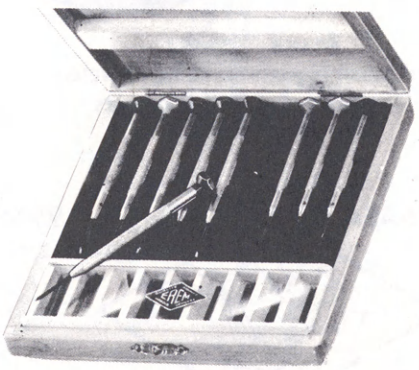
DE LUXE SCREWDRIVER SETS 5 EXTRA BLADES PER SCREWDRIVER



No. 238 SET OF 4 PIECES



No. 239 SET OF 6 PIECES



No. 240 SET OF 9 PIECES

SEE CATALOG #16 FOR ADDITIONAL ASSEMBLY TOOLS

ALL PRICES SUBJECT TO CHANGE F.O.B. PHILADELPHIA

ATTENTION! – AVAILABLE FROM STOCK

MANUFACTURERS OF SEMICONDUCTORS *and* THIN FRAGILE TYPE UNITS

Improve your WAFER and DICE handling with NEW TWEEZER DESIGNS from

See price list - pages 44 to 47

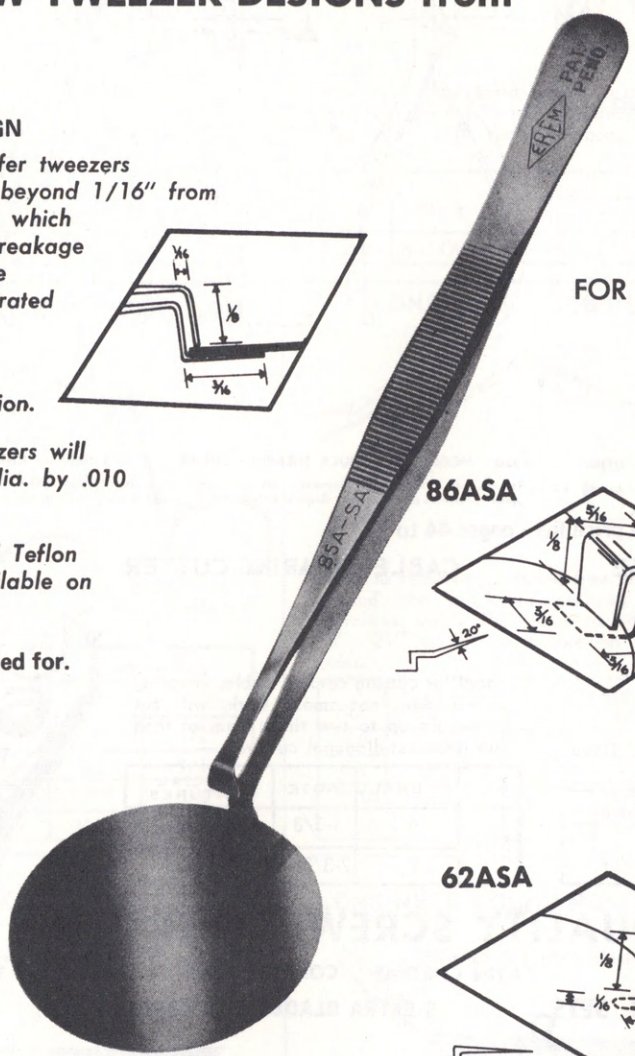
EREM®

- **NEW DESIGN**
  Prevents wafer tweezers from going beyond 1/16" from wafer edge, which eliminates breakage and damage of the Integrated circuits.

- *Positive Holding Action.*
- *Wafer tweezers will handle 2" dia. by .010 and larger.*

  1½ to 5 mil Teflon coating available on request
- **Patent Applied for.**

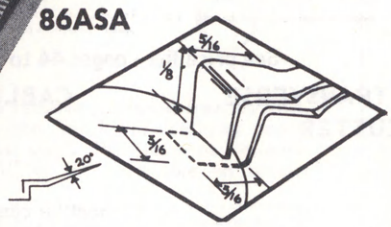
All dimensions shown are approximate.



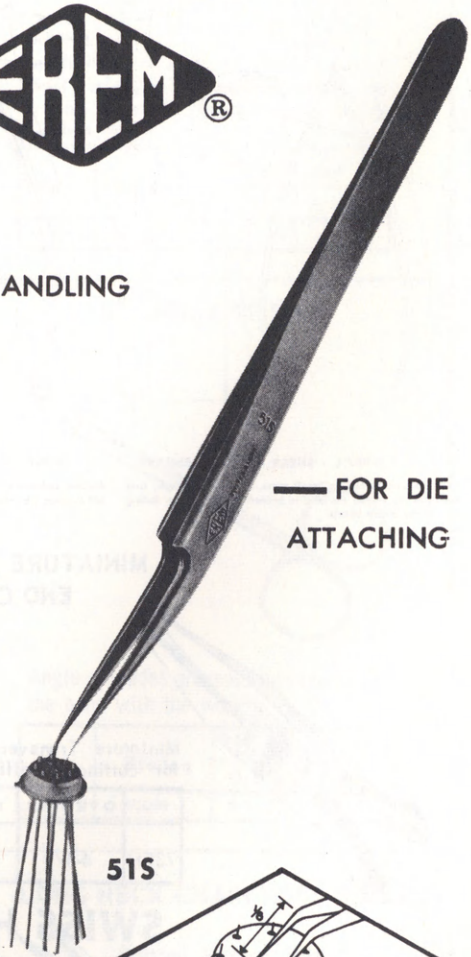
FOR WAFER HANDLING

62ASA - 72ASA
will accommodate handling of wafers in tray type of loading boats

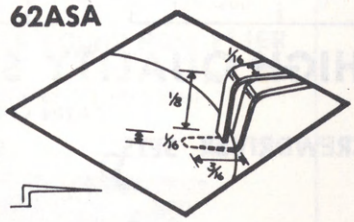
86ASA



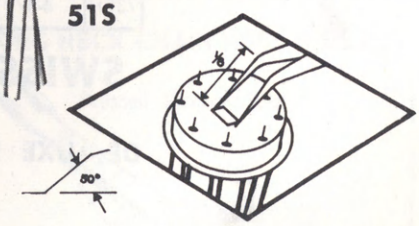
— FOR DIE ATTACHING



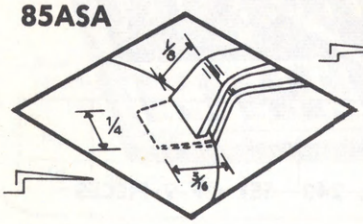
62ASA



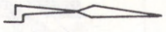
51S



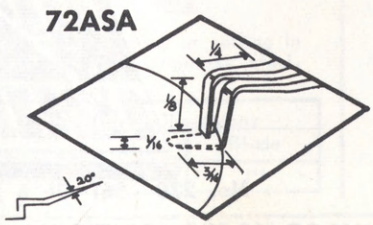
85ASA



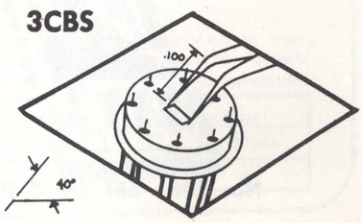
95ASA



72ASA



3CBS



SEE CATALOG #16 FOR ADDITIONAL TWEEZER LISTINGS

ALL PRICES SUBJECT TO CHANGE F.O.B. PHILADELPHIA

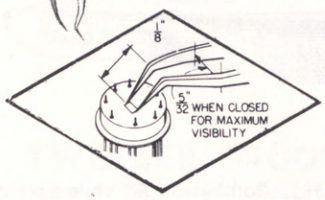
SECOND GENERATION

"WAF-O-GRIP" and "EASY-GRIP"

• EREM ENGINEERED

66-S

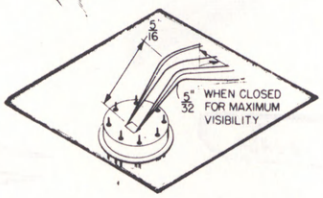
Approx. length: 5¼"



• PRECISION MANUFACTURED

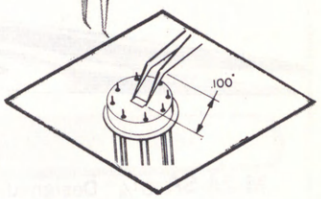
5c-S

Approx. length: 5¼"

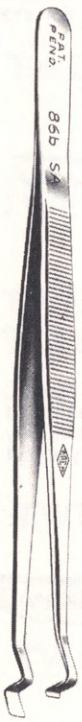


65a-S

Approx. length: 4½"

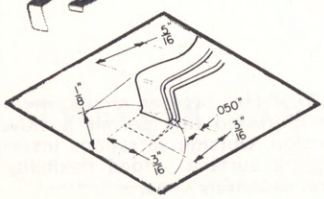


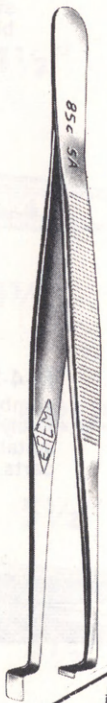
"EASY-GRIP" FOR DIE ATTACHING



86b-SA

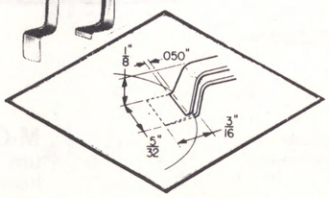
Approx. length: 4½'

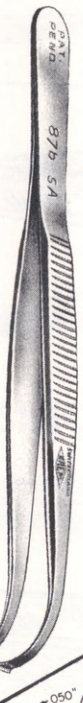




85c-SA

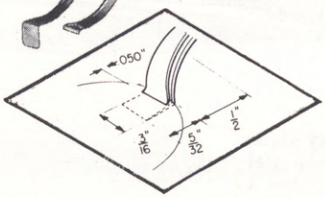
Approx. length: 4½"

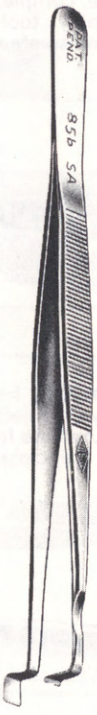




87b-SA

Approx. length: 4½"

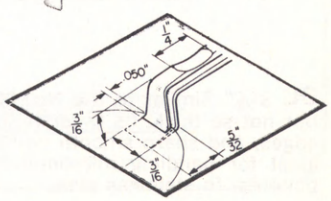




85b-SA

Approx. length: 4½"

Anti-Crush Feature



"WAF-O-GRIP" FOR WAFER HANDLING

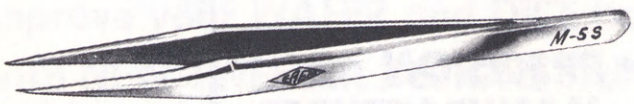
SEE CATALOG #16 FOR ADDITIONAL TWEEZER LISTINGS

ALL PRICES SUBJECT TO CHANGE F.O.B. PHILADELPHIA

NEW EREMETTES – FOR MICROELECTRONIC ASSEMBLY

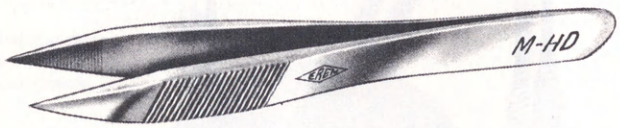
specially designed to meet the demanding requirements of microminiature electronic assembly. Precision manufactured in the best tradition of Swiss craftsmanship, this line of twelve Eremettes aims at increasing "feel" for fine tip work and eliminating the excessive bulk of long tweezers.

ALL TWEEZERS SHOWN ACTUAL SIZE



M-5-S 3¼" New Eremette style designed to fit comfortably in assembler's hand, allowing easier, faster movements. Indented shanks provide maximum visibility, reducing losses. In stainless steel.

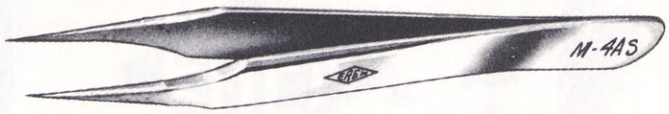
M-2A-SA 3¼" Designed for wafer handling. In shorter Eremette length may supplant more complex miniature component assembly tools. Non-magnetic, anti-acid. Stainless steel.



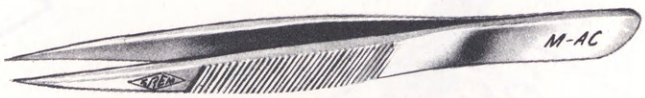
M-HD 3⅛" A stubby, heavier miniature tweezer for heavier objects. Serrated inside for holding, outside for gripping. Outside serrations are close to points for better leverage.

OC 3½" Similar to the No. 00 in style, but not so thick. Its tapered shanks, flat edges, and sharp smooth points make it ideal for handling microminiature components. In stainless steel.

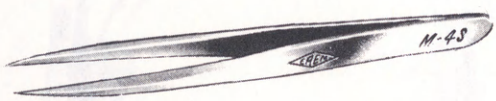
M-3C-S 2¾" One of most widely used types of tweezer due to tapered shank, beveled edges, extremely sharp points. New Eremette length should broaden range of uses. Stainless steel.



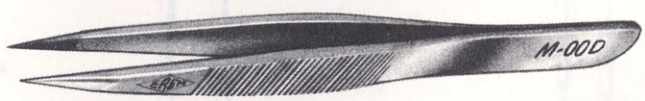
M-4A-S 3½" Longest of Eremettes. Needle-like tips, indented shanks, beveled edges for handling microminiature objects. Length similiar to M-5-S, indented shank for added strength. Stainless steel.



M-AC 3¼" Combines "A" style tip with increased holding capability of outside serrations. Slightly heavier than No. OO-D style. Smooth, medium point. For assembly, sorting, transferring, etc.



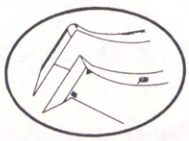
M-4-S 2⅝" A unique tweezer. Its length, combined with long tapered shank and finely honed points, make it particularly suitable for handling of extremely small parts. In stainless steel.



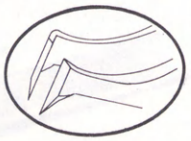
M-OOD 3¼" Has tapered shank, medium point. Serrated tips permit positive holding action. Outside serrations insure good gripping surface, added flexibility. For general assembly uses.

See price list pages 44 to 47

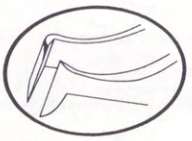
"DUMONT STYLE" CUTTING TWEEZERS



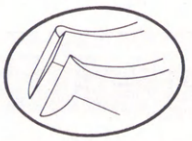
NO. 15a-GW 4½"
OBLIQUE CUTTING TWEEZER
Recommended material which this tweezer will safely cut: .020 Dia. Copper and Soft wire. Flush Cut.



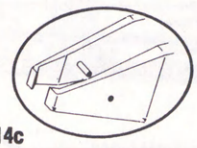
NO. 15a-FW 4½"
OBLIQUE CUTTING TWEEZER
Recommended material which this tweezer will safely cut: .020 Dia. Copper and Soft wire. Flush Cut.



NO. 15a-NW 4½"
OBLIQUE CUTTING TWEEZER
Recommended material which this tweezer will safely cut: .020 Dia. Copper and Soft wire. Flush Cut.

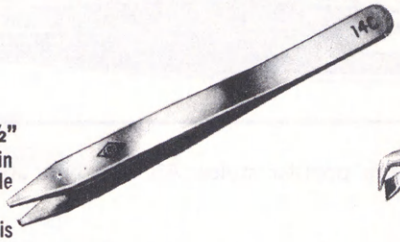


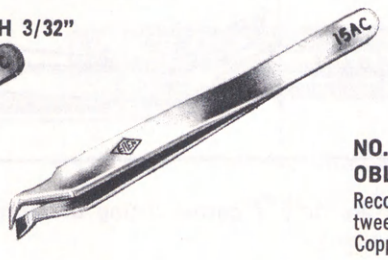
NO. 15a-SW 4½"
OBLIQUE CUTTING TWEEZER
Recommended material which this tweezer will safely cut: .020 Dia. Copper and Soft wire. Flush Cut.



NO. 14c
NARROW TOP CUTTING 4½"
This cutting tweezer has a pin in the jaws to maintain cutting blade alignment.
Recommended material which this tweezer will safely cut: .010 Dia. Copper and Soft wire. Flush Cut.

TIP WIDTH 3/32"





NO. 15ac 4½"
OBLIQUE CUTTING TWEEZER
Recommended material which this tweezer will safely cut: .010 Dia. Copper and Soft wire. Flush Cut.

TWEEZER #000 4½"
(Same as 00, but with Radius Edges)

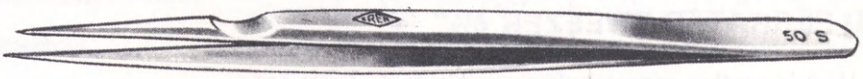
TWEEZER # OA 4½"

TWEEZER # OOC 4¼"

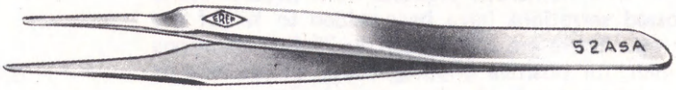
TWEEZER #5a 4½"
STAINLESS #5a-S

ANTI-CRUSH POINTS FOR SILICON WAFERS

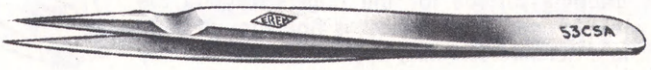
TWEEZER #50-S 5½"



TWEEZER #52a-SA 4½"



TWEEZER #53c-SA 4¼"



SEE CATALOG #16 - PAGES 23-30 FOR ADDITIONAL TWEEZERS
ALL PRICES SUBJECT TO CHANGE F.O.B. PHILADELPHIA

PRECISION ASSEMBLY TWEEZERS

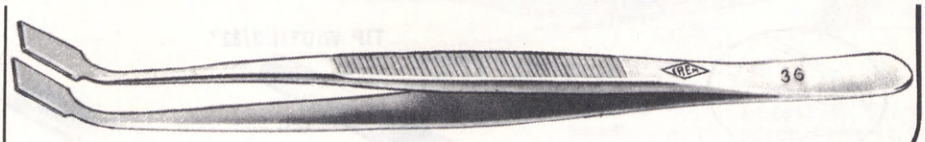
GRIPPING TWEEZERS

TWEEZER # 38 4½"
.008 Hole

TWEEZER # 39 4½"
.012 Hole

TWEEZER # 40 4½"
.015 Hole

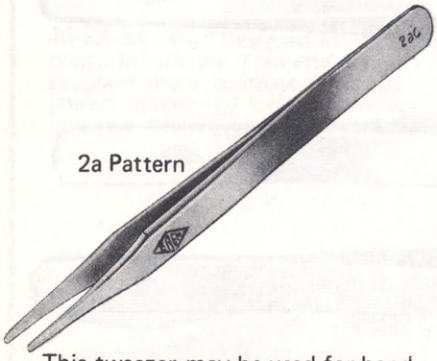
TWEEZER # 36 4¾"
Offset



The tweezers and holders shown are only a partial listing of more popular styles. All standards are available. See list or write for more information and catalog.

The special alloy that gives a Non-Magnetic Tweezer its special properties, is "NICKEL-SILVER", a combination of Copper, Zinc, and Nickel. Therefore, the more Nickel put into a Tweezer during manufacturing, the better the Non-Magnetic and Non-Scratching properties of the Tweezer.

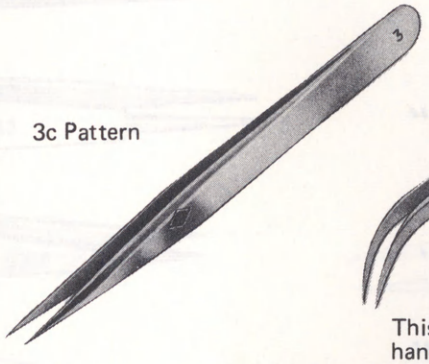
2a Pattern



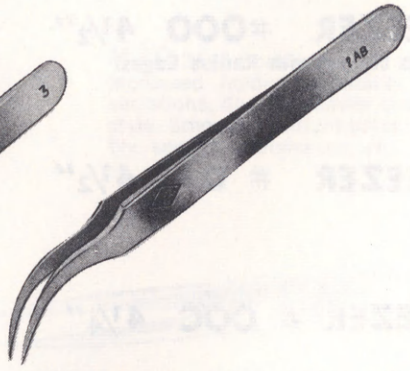
This tweezer may be used for handling wafers. Flat tips.

REF. No.	MATERIAL	LENGTH
2aC	Nickel Silver Non-Magnetic	4½"

3c Pattern



REF. No.	MATERIAL	LENGTH
3cN	Nickel Sliver Non-Magnetic	4½"

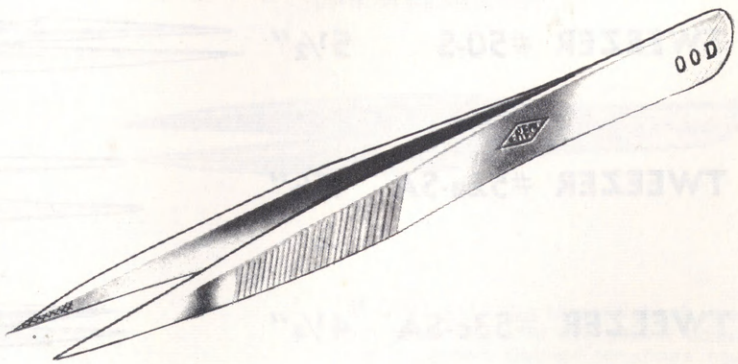


This tweezer may be used for wafer handling. Flat tips.

REF. No.	MATERIAL	LENGTH
2aB	Nickel Silver Non-Magnetic	4½"

00D SERRATED TWEEZER 4½"

Here is another very popular assembly tool. Erem has put serrations in the ever popular 00 Dumont style tweezer. After numerous requests from tweezer users, **fine crossed serrations** have been added to ½" of the tweezer tip. There are approximately 75 fine serrations to the inch, for positive gripping action of the wire or other material being held. Larger serrations have been added to the outer surfaces of the tweezer to insure an excellent gripping surface for the fingers holding the tweezer while in use. This tweezer is fine enough to be used on those delicate assembly applications and sturdy enough to handle those slightly larger projects.

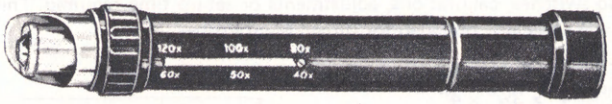


See price list - pages 44 to 47

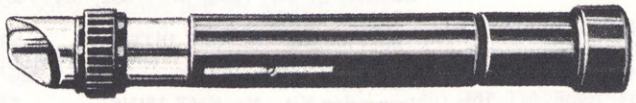
MICROSCOPES

With Adjustable Focus and Light Reflector to Give the Clearest Image Possible.

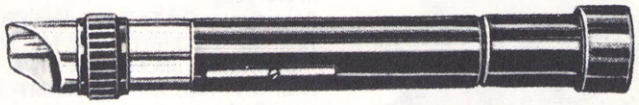
- **POCKET MICROSCOPES 5½"**
- **Adjustable Magnification**
- **Finest Quality Lenses**



NO. 245 MICROSCOPE
40x50x60x80x100x120x Adjustable Magnification



NO. 244 MICROSCOPE
15x25x35x Adjustable Magnification



NO. 243 MICROSCOPE
40x50x60x Adjustable Magnification

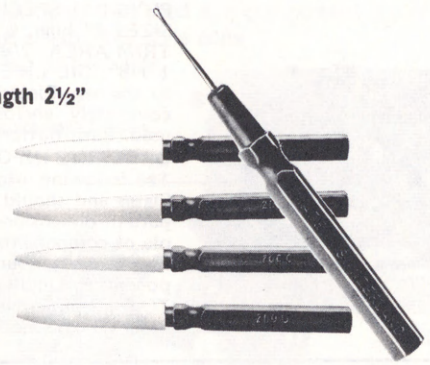
MINIATURE OILERS or SPATULAS

This handy tool may be used for applying Lubricants to small moving parts. They may also be used as Miniature Spatulas for applying Adhesives in the assembly of Electronic Components.

Colored Plastic Handles for easy Identification

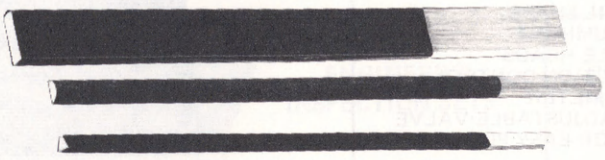
REF. NO.	TIP SIZE	COLOR
260A	Very Small	Black
260B	Small	Blue
260C	Medium	Green
260D	Large	Red

Overall Length 2½"



EMERY STICKS

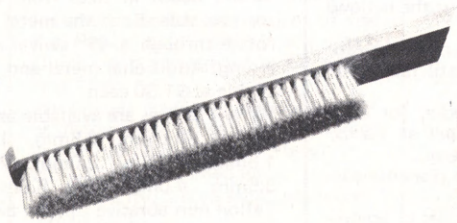
For Finishing and Polishing of Precision parts. Many Miscellaneous applications.



REF. NO.	SHAPE	LENGTH	WIDTH	GRIT
191	½ RD.	11"	½"	2
192	½ RD.	11"	½"	2/0
193	TRI.	11"	¼"	2
194	TRI.	11"	¼"	2/0
195	FLAT	11"	⅞"	2
196	FLAT	11"	⅞"	2/0

BENCH BRUSHES

Made of High Grade Bristle, WILL NOT SHED.
OVERALL LENGTH 10"
WOODEN HANDLE
BRISTLES 4½" x ½" WIDE
(4 Rows)



NO. 187-SOFT
NO. 189-HALF SOFT
NO. 190-HALF HARD

See price list - pages 44 to 47

PRODUCTION ACCESSORIES

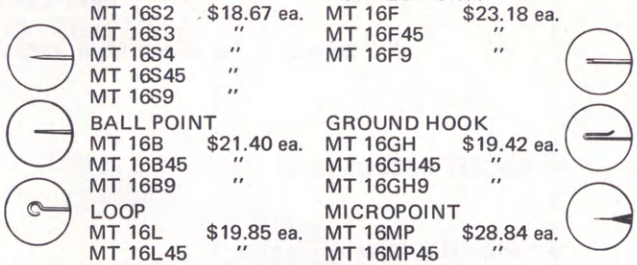
HUMDICATOR—AUDIBLE TESTER OF CIRCUT CONTINUITY

The volume control adjusts to the noise-level of the surroundings. The audible signal provides a positive go or no-go continuity check without meter watching. The current across the probes is less than 10 microamps so this device can be used to check semiconductors in microcircuits without fear of damage to delicate or current sensitive components.

There are no switches, calibrations, adjustments or set-up time required. This instrument was especially designed for Circon MicroProbes.

SPECIFICATIONS

Size	4" x 3¼" x 4"
Weight	18 oz.
Primary Power	One "D" size 1.5 volt.
Output	Power 4 Micro-watts maximum.



SHARP POINT		FORKED POINT	
MT 16S2	$18.67 ea.	MT 16F	$23.18 ea.
MT 16S3	"	MT 16F45	"
MT 16S4	"	MT 16F9	"
MT 16S45	"		
MT 16S9	"		
BALL POINT		**GROUND HOOK**	
MT 16B	$21.40 ea.	MT 16GH	$19.42 ea.
MT 16B45	"	MT 16GH45	"
MT 16B9	"	MT 16GH9	"
LOOP		**MICROPOINT**	
MT 16L	$19.85 ea.	MT 16MP	$28.84 ea.
MT 16L45	"	MT 16MP45	"
MT 16L9	"	MT 16MP9	"

•Humdicator Laboratory Kit No. HKMT 16QC $528.87
Quality control kit of 20 microProbes, one of each style and configuration.

•Humdicator Welded Module Kit No. HKMT 16WM $205.08
With MT 16F, MT 16F45, MT 16F9, MT 16S3, MT 16GH microProbe.

•Humdicator Gel Encapsulation Kit No.HKMT16GEL $191.55
With MT 16S3, MT 16S2, MT 16S4, MT 16S4 microProbe.

•Humdicator Thin Film Kit . No. HKMT 16TF $210.34
With MT 16B, MT 16B45, MT 16B9, MT 16MP, MT 16L microProbe.

•Humdicator Inspection Kit No. HKMT 16INS $212.96
With MT 16MP, MT 16B, MT 16S3, MT 16F, MT 16GH microProbe.

•Humdicator Controller Only No. H-1 $ 97.45

•Humdicator Thin Film Kit No. HKMT 16TF $210.34

Weld Module Kit No. KMT 16WM $107.63
Consists of MT 16F, MT 16F45, MT 16F9, MT 16S3, MT 16GH.

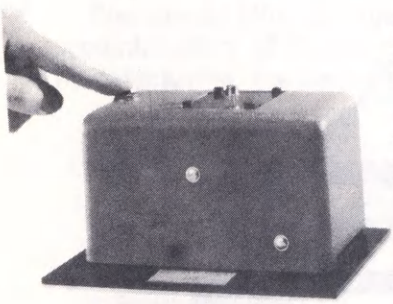
Gel Encapsulation Kit No. KMT 16GE $ 94.10
Consists of MT 16S3, MT 16S2, MT 16S4, MT 16GH, MT 16S4.

Thin Film Kit No. KMT 16TF $112.89
Consists of MT 16B, MT 16B45, MT 16B9, MT 16MP, MT 16L.

Inspection Kit No. KMT 16INS $111.51
Consists of MT 16MP, MT 16B, MT 16S3, MT 16F, MT 16GH.

Designers or Quality Control Kit No. KMT 16QC $431.42
Consists of 20 microProbes, one of every style and configuration.

COMPONENT LEAD TRIMMER



PHYSICAL SPECIFICATIONS
SIZE: 4" high, 6" wide, 7 1/2" long. WT: 5 lbs. TRIM AREA: 7/8"x1 7/8". OPTIONAL: 1 7/8"x 1 7/8". DIE LIFE: 2 to 4 million before required to sharpen. Electrically operated shear mechanism completely enclosed. Highest quality tool steel used. Push button switch. (Foot switch optional).

ORDERING INFORMATION
The following information is required to make Die Plates and should be supplied with order. 1. Hole pattern dimensions or sample of PC board. 2. Sample of components. 3. Thickness of board. 4. Lead length above board. Measured from base of component. 5. Lead length below board. 6. For 8 lead TO-5 (.2 pin circle), 10 lead TO-5 (.230 pin circle) order CT-250 model.

CT-125 Machine only (Less Die Plates)	**$260.00**
CT-250 Machine only (Less Die Plates)	**$260.00**
Die Plate set with 2 hole pattern	**$ 80.00**
Die Plate set with 3 hole pattern	**$ 90.00**
Die Plate set with 4 hole pattern	**$100.00**
Die Plate set with 6 hole pattern	**$120.00**
Die Plate set with 8 hole pattern	**$140.00**
Die Plate set with 10 hole pattern	**$160.00**
Die Plate set with 14 hole pattern	**$200.00**
Die Plate set with 16 hole pattern	**$220.00**
Die Plate set with more than 16 holes will be quoted on application.	
Foot Switch	**$ 8.95**

Prices F.O.B. Factory Prices subject to change w/o notice

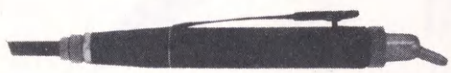
ALL-PLASTIC 30cc BELLOWS DISPOSABLE SYRINGE & NEEDLE

NEW

Measure accurately, mix and dispense right in the bellows syringe.
Enables inexperienced help to accurately measure the amounts of components to be used, and accurately dispense the component in drops, solid line, or pot, as each half flute displaces three cc of material.
No drip or suck back are features of the bellows design.
ideally suited as storage containers for frozen, pre-mixed, two-part materials until ready for use.
Long tapered tip, all-plastic needle, for deep component potting or hard to get at places, needle is flexible and non-conductive.
Minimum pressure is required to dispense successfully Eastman 910.
Filling of the Bellows Syringe is easily accomplished through the large opening by hand, or from automatic dispensing equipment.

.15 ea.

VACUUM FORCEPS

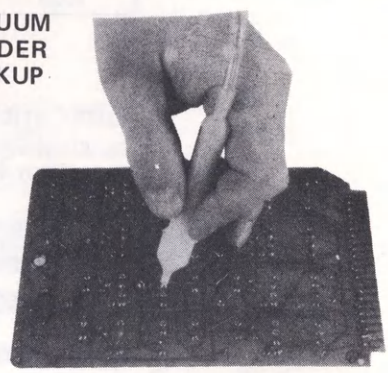


1 to 24 units - **$20.00** per unit
25 or more units - **$18.00**

- "NATURAL" PENCIL SHAPE
- LIGHTWEIGHT ALUMINUM
- INTERCHANGEABLE HEADS
- INDEPENDENT SUCTION CONTROL
- BUILT-IN SCREEN FILTER
- SPRING-LOADED ADJUSTABLE VALVE
- HEAD ROTATES FOR EASY POSITIONING

Interchangeable metal heads, varying in size from 0.4mm to 6.0mm, and new non-abrasive Teflon heads in sizes from 0.5mm to 6.0mm are available. Both the metal and Teflon heads rotate through a 45° swivel arc for easy positioning. Additional metal and Teflon tips are available at $1.50 each.
Metal Tip sizes are available as follows:
0.4mm, 0.5mm, 0.8mm, 1.0mm, 1.2mm, 1.5mm, 1.7mm, 2.0mm, 2.5mm, 3.0mm, 3.5mm, 4.0mm, and 6.0mm.
Teflon non-abrasive tips are available as follows:
0.5mm, 0.6mm, 0.7mm, 1.0mm, 1.2mm, 1.5mm, 1.7mm, 2.0mm, 2.5mm, 3.0mm, 3.5mm, 4.0mm, and 6.0mm.

VACUUM SOLDER PICKUP

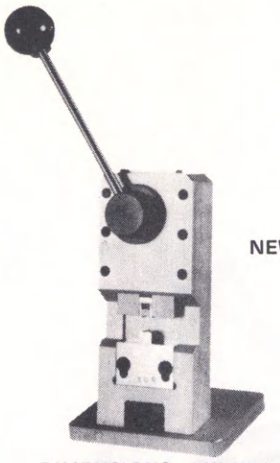


The body is machined from durable nylon. It is unbreakable and can be washed in cleaning solvent.
A positive filter insures capture of solder particles. The filter may be cleaned and re used.
Long-life tips are made of teflon. They are adjustable, and may be trimmed or cut to fit a particular job. Two additional tips are furnished with each tool.
VSP operates with any standard vacuum source.

VSP 5/8" Dia., 5 1/2" O.A.L., 1 oz. wt.	
1-9	**$14.95**
10-24	**13.45**
MVSP 1/2" Dia., 4 1/8" O.A.L., 1/2 oz. wt.	
1-9	**$12.95**
10-24	**11.65**

ALL PRICES SUBJECT TO CHANGE F.O.B. PHILADELPHIA

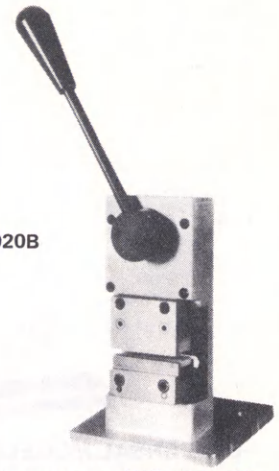
INTEGRATED CIRCUIT CUTTING AND FORMING TOOL



NEW MODEL 4920A

Precision Bends and Cuts any Flat Pack
Dies can be changed quickly in minutes
Burr Free clean ends ready for use
Will not injure components, deform or de-laminate
Accurate and easy loading and unloading
Lightweight, portable and stable in use
Smart looking anodized finish
Trouble free cam action
Smooth and even performance

FOR PACKS OVER 3/8" TO 5/8" WIDE SEND YOUR PACK OR DETAILED DRAWING FOR STYLE OF DIE SET REQUIRED
FOR FLAT PACKS UP TO 5/8" WIDE

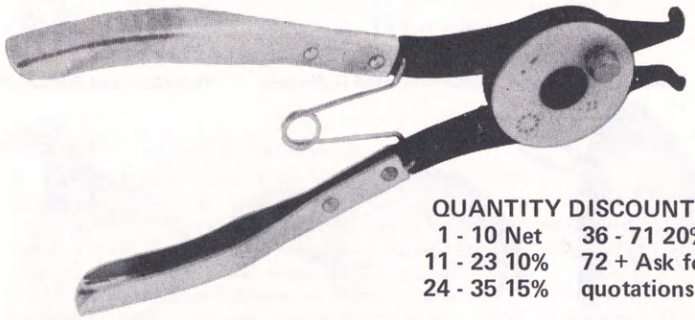


DIP MODEL 4920B

DIMENSIONS: 16" High by 5½" Wide by 4½" Deep Approx.
NET WEIGHT: Approximately 5½ lbs.
PRICE: $560. includes one set of dies. Extra die sets Cut and Bend, Bend Only, Cut Only $225. Staggered $260.
See Page No. 105 in Catalog #16 for other models.

This newest production tool from ETC is as trouble, free as our established Model 8001. It will handle packs up to 5/8" wide. Cut, bend and stagger bend any pack, with easy loading and unloading.

DIP MODEL
For dual inline packages up to 1¼" wide, 3" long Shear action - non-shocking - Hi-leverage cam Dimensions: 17" high by 5½" wide by 5" deep.
Net weight approximately 8 lbs.
Price: $660.00 includes one set of dies. Extra dies $335.00 per set.
Send us your detailed drawings and sample DIPS.



QUANTITY DISCOUNTS:

1 - 10 Net	**36 - 71 20%**
11 - 23 10%	**72 + Ask for**
24 - 35 15%	**quotations**

No. 4921 TRANSEM TOOL
For lead trimming of transistor and semi-conductor devices.

Will accommodate all components from 2 to 10 leads
Shear cuts all leads in one operation without shock
Standard length 1/4". Other lengths available
Head configuration used as a component puller
Will not crush TO5 style cans
Also used as heat sink

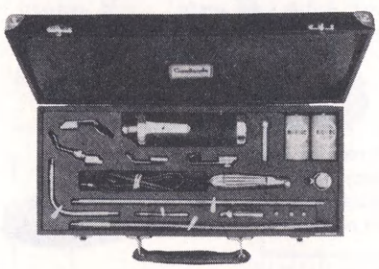
Transem Tool . . . . . $14.75 ea.
Replacement Blades . . . $6.50 ea.

"IN-CIRCUIT" TRANSISTOR TESTER

MODEL 85
$15.95

A complete electronic tester. No additional equipment required. Designed to reach into small areas. Maximum voltage applied to the base-emitter junction by tester is 0.8 volts.
TO OPERATE—Set the selector switch to NPN or PNP. Place the contacts of the tester in the correct position on the printed circuit board. The tester will emit a tone indicating that the transistor under test is a functioning unit. The absence of a tone indicates a shorted or open transistor. Setting the selector switch to the wrong position will cause no harm to your circuit.
TO REPLACE THE BATTERY—Pull off the speaker cap, remove speaker, slide the battery out for replacement.
PLUG-IN ACCESSORIES—
EXTENDER CABLE (incl. with tester)
CONTINUITY AND DIODE TESTING ADAPTER-MODEL 86
(Ind. Net $3.75)

Places transistor into actual operation
Operates upon contact
Clear speaker tone—no visual observations to make
Tests transistors in or out of the circuit



ENGINEERS' INSPECTION SETS

The Complete Inspection Set #3025 **$85.00**

The Complete Inspection Set consists of a range of probes-straight and angled, rigid and flexible-each carrying a miniature medical-type lamp powered by two standard 1.5 volt batteries in a handle. By means of these probes, a brilliant patch of light can be produced in the most inaccessible places, and, used in conjuction with a slip-on magnifier and mirrors, the user can inspect the interiors of motors, turbines, etc., thus avoiding costly dismantling. A hook and magnet are also supplied in the set, for recovery of dropped nuts, washers or similar small objects. The contents are listed overleaf. The set is supplied in a leather-covered case with carrying handle and rubber feet.

FLEXI-VISE
Universal 3-way Angle Vise

SINGLE
$19.50 each

Infinitely variable adjustment of vise position-rotatable 360° in any plane. Quick, firm adjustment by large knurled finger nut.
Jaws rotate on rachet which can serve as divider plate for setting at different angles (40-teeth giving 9° steps).
Non-skid rubber-lined base.
Jaw capacity: 11/16 inch. Jaw width: 17/16 inch.
Larger, round, components can be clamped in lower, rounded, section of jaws.

KLEIN WIRE STRIPPER

$1.26

A compact, light handy tool only 5 inches long-ideal for stripping insulation from wire. Convenient hole for looping or bending wire. Handles yellow plastic dipped. Strong spring holds jaws open for maximum convenience. Also available without spring.

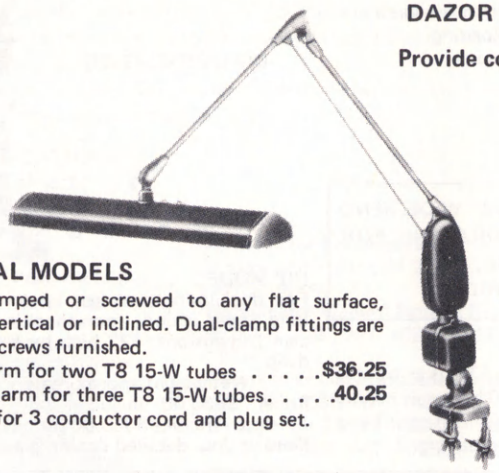
Cat. No.	Length
1004 With spring	5 in.

DAZOR LAMPS

QUANTITY DISCOUNT: 2 - 5 20% 6 + 25%

DAZOR FLOATING-ARM FLUORESCENT LAMPS

Provide cool, soft, glareless light over the working area.



UNIVERSAL MODELS

May be clamped or screwed to any flat surface, horizontal, vertical or inclined. Dual-clamp fittings are removable. Screws furnished.

2134 - 34" arm for two T8 15-W tubes **$36.25**
134A3 - 34" arm for three T8 15-W tubes. **40.25**
Add **$10.00** for 3 conductor cord and plug set.

DESK MODELS

Has a weighted base with heavy felt on the underside to protect desk finish.

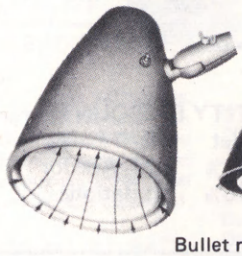
2324 - 24" arm for two T8 15-W tubes **$44.25**
Add **$10.00** for 3 conductor cord and plug set.

ADJUSTABLE-ARM air-cooled

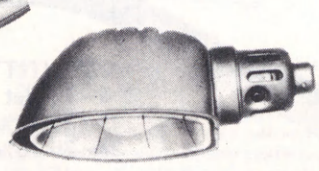
UNIVERSAL MODELS

These low cost Dazor industrial lamps bring comfort to machine and bench lighting, plus the capacity to hold a position despite vibration. The double arm design incorporates two steel ball joints, the Dazor swivel joint and three wing nuts. Together they give the operator full control over tension and location. Three air cooled reflector styles meet varied clearance requirements. Base is stamped steel, L-shaped, with elongated holes for bolting or screwing to horizontal or vertical surface. Dual-clamp fittings are supplied for clamp-on fastening if preferred.

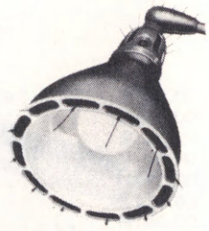
Bullet Reflector



Side-Mounted Reflector

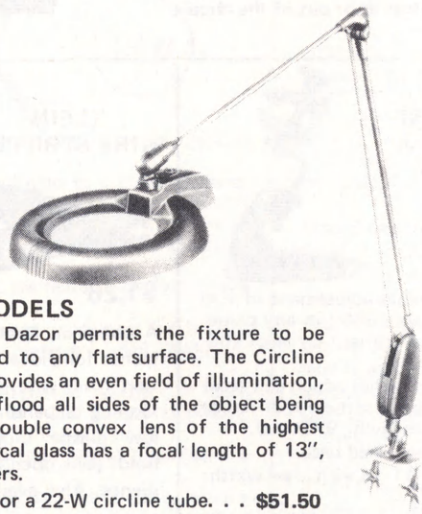


Top-Mounted Reflector



Bullet reflector for 100-watt bulb
1104 - 31" arm **$22.75**
1105 - 20" arm **22.75**
Side-mounted reflector for 60-watt bulb
1102 - 31" arm **$21.75**
1103 - 20" arm **21.75**
Top-mounted reflector for a 60-watt bulb
1100 - 31" arm **$19.25**
1101 - 20" arm **19.25**
Add **$10.00** for 3 conductor cord and plug set.

FLOATING-ARM MAGNIFIERS WITH CIRCLINE FLUORESCENT LIGHTING

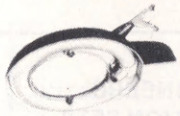


UNIVERSAL MODELS

The base of this Dazor permits the fixture to be clamped or screwed to any flat surface. The Circline fluorescent tube provides an even field of illumination, for the light rays flood all sides of the object being viewed. The 5" double convex lens of the highest quality crown optical glass has a focal length of 13", a power of 3 diopters.

M-1408 - 34" arm for a 22-W circline tube. . . **$51.50**
M-1409 - 24" arm for a 22-W circline tube. . . . **49.50**
Add **$10.00** for 3 conductor cord and plug set.

UNDERSIDE VIEW



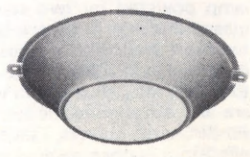
DESK MODEL

Has a weighted base that does not require fastening down. Heavy felt underside protects desk finish.

M-1470 - 18" arm for a 22-W circline tube. . . **$57.50**
Add **$10.00** for 3 conductor cord and plug set.

M-1400 DAZOR ADD-A-LENS

For 50% more magnification. Designed specifically for circline magnifiers. Two screws already in place easily attach lens to underside of lamp. **$8.25**



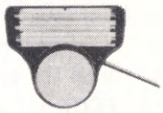
DAZOR LAMPS

See pages 44-46 in catalog #16 for other lamps

FLOATING-ARM MAGNIFIERS WITH 3-TUBE FLUORESCENT LIGHTING

For operation on 118V-60C alternating current
QUANTITY DISCOUNT: 2 - 5 20% 6 + 25%

The Dazor Floating Magnifier's combines optically correct magnification and cool fluorescent lighting. The 5" double convex lens of high quality crown optical glass has a focal length of 13", a power of 3 diopters. Three 6 watt tubes are positioned to furnish incident lighting to emphasize flaws and/or three dimensional objects.



Underside View

UNIVERSAL MODELS

The base permits the fixture to be clamped or screwed to any flat surface, horizontal, vertical or inclined.
M-208 - 34" arm for three T5 6-w tubes **$54.50**
M-209 - 24" arm for three T5 6-w tubes **52.50**
Add **$10.00** for 3 conductor cord and plug set.

DESK MODEL

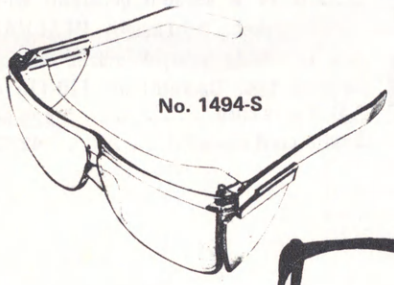
The weighted base does not require fastening down.
M-270 - 18" arm for three T5 6-w tubes. . . . . **.$60.50**

PEDESTAL MODEL

Pedestal measures 39" from floor to arm hinge at top of pedestal.
M-210- 24" arm for three T5 6-w tubes . . . . . **.$67.00**
Add **$10.00** for 3-conductor cord and plug set.

No. 1494 VISITOR'S GOGGLES

A must in Electro Chemical Manufacturing Areas
Three way protection against plant eye hazards: top, front and sides. Fits over prescription glasses. One piece lens with deep, full coverage. Lightweight, folds flat for convenient carrying or storage. (Available in dozen units only).
No. 1494 Clear frame and lens, no side shields . . . **$10.95 per doz.**
No. 1494-S Clear frame and lens, with side shields . **$11.50 per doz.**



No. 1494-S

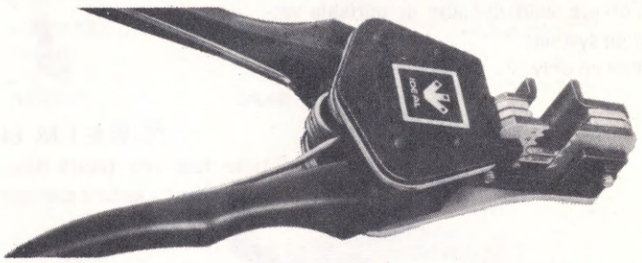
No. 441C

CLIP-ON-SPEC

Nylon frames with replaceable lenses of impact resistant cellulose acetate. Clip on easily even onto the largest glasses. Featherlight lens are .050" thick and has half the density of glass for clearer viewing. Meets Federal and A.S.A. Specifications. Clip on tabs are made of the same tough, resilient nylon as the frames and are easily replaceable.
No. 441C with clear lenses. . . . . **$10.20** per doz.

STRIPMASTER "600"

The most rugged automatic single squeeze hand stripper made. Strips both solid and stranded wire. Eliminates nicking or cutting and won't crush wire or fray ends. Strips up to a full 7/8 inch. Jaws automatically stay open after stripping for removal of wire before blades snap back to starting position. Permanently self lubricating. Handle fits all hand sizes comfortably. Can be used all day without fatigue. Super hardened blades easily disassembled by removing just two retaining nuts



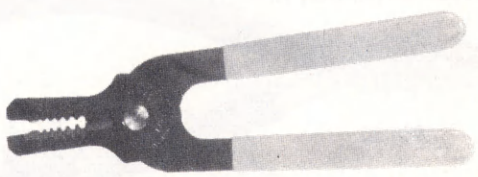
No.	No. of Holes	Wire Gauge	Price	Replacement Blades No.	Price
45-611	4	8-14	$6.45	L-8823	$1.75
45-612	6	8-22	6.45	L-8824	1.75
45-613	5	10-18	6.45	L-8825	1.75
45-614	6	16-26	6.45	L-8826	1.75
45-615	5	14-22	6.45	L-8827	1.75

Postage will be paid by adressee

No postage necessary if mailed in the United States

BUSINESS REPLY MAIL
First Class Permit No. 1725 Philadelphia, Penna. 19107

TECHNI-TOOL, INC.
1216 Arch Street
Philadelphia, Penna. 19107



IDEAL T-7 POCKET SIZE STRIPPER

An inexpensive tool to handle solid wire sizes as small as #30 AWG. Has holes for Nos. 22, 24, 26, 28 and 30 AWG. The yellow handles distinguish it from the **T-6** which has red handles. **T-6** holes are of different dimensions to accommodate standard wire. . . . . **.$2.75 ea.**

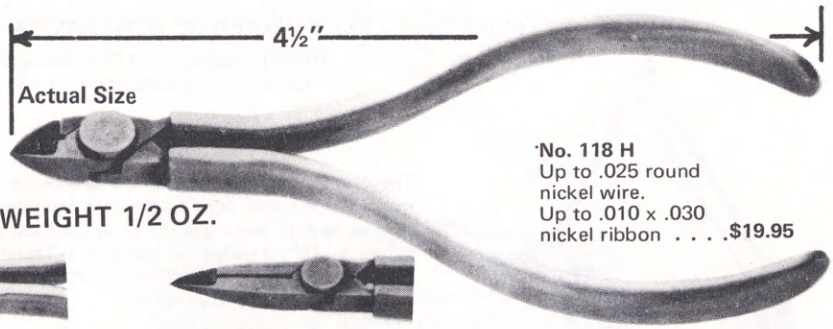
SPECIAL PURPOSE PLIERS

QUANTITY DISCOUNTS: 1 - 9 Net | 10 - 24 3% | 25 - 49 5% | 50 - 99 7% | 100 + 10%

DELI-DYKES

Engineered for a woman's hand.

Combines the proven tool steel cutting heads of the DELI-CUT line with miniature plier handles. Designed for the computer industry and small electronic wire cutting, they can be used over long periods without fatigue. **Lightweight ½ oz.** Cutters are tool steel hardened to 60-62 R/C with diamond honed edges.



No. 118 H
Up to .025 round nickel wire.
Up to .010 x .030 nickel ribbon . . . **$19.95**

No. 110 H
Up to .014 round nickel wire. **$19.95**

No. 112 H
Up to .010 round nickel wire. **$19.95**

No. 113 H
Up to .010 round nickel wire. **$19.95**

No. 116 H
Up to .012 round nickel wire. **$19.95**

No. 117 H
Up to .010 round nickel wire. **$19.95**

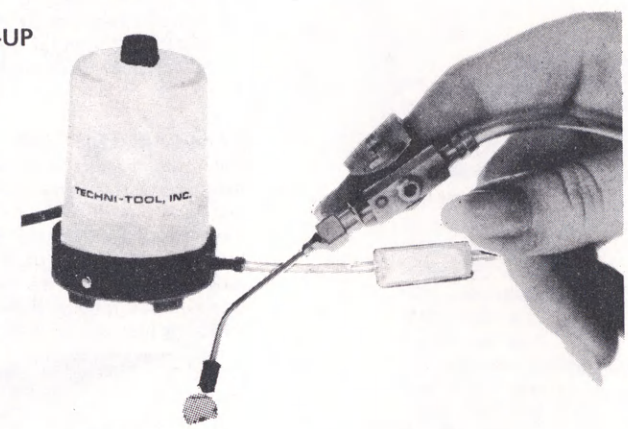
No. 119 H
Bending **$12.95**

No. 121 H
Bending **$12.95**

No. 122 DELI-VAC VACUUM PICK-UP

For handling miniature parts with finger tip control. New finger attachment principle eliminates the fatigue of the normal large hand pencil. Ideal for semi-conductor and IC assembly where long periods of small component handling is necessary. Attaches comfortably to the finger by means of an adjustable Velcro band. A vacuum is created by covering a control hole with the thumb. For use with in-house or portable vacuum systems

Pickup only. **$6.75**

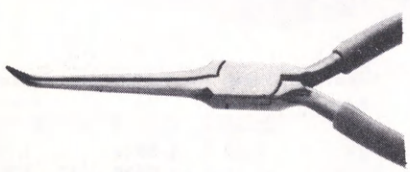


No. 51 VACUUM PICK-UP SYSTEM

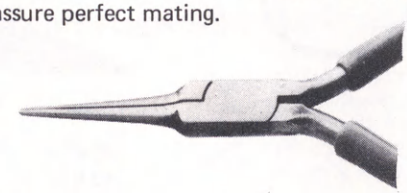
Ideal for handling ceramic and glass substrates, semi-conductor parts, tissues and other small, thin materials and parts where contamination or breakage may occur with conventional techniques. Consists of a vacuum generator with on/off switch, lightweight DELI-VAC pick-up, in-line filter, 4' plastic hose, 5 assorted tips. Operates on 110-115 v. A.C. 2 wire cord **$35.50**
3 wire cord (Specify) **42.00**

NEW E.T.M. CUSTOM BENDING PLIERS

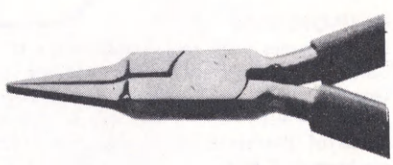
These full size pliers have non-serrated radius edges and custom fitted tips to assure perfect mating.



No. 1108 45° bending tip, 2" nose, 3/8" bend. 6" O.A.L. **$8.95**

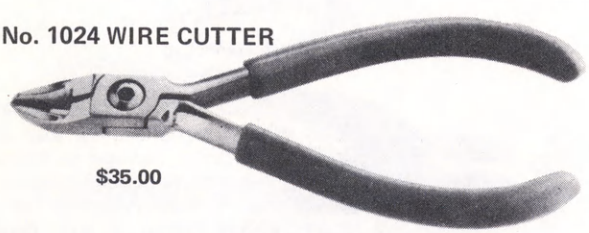


No. 1109 Heavy duty 1½" long nose. 5½" O.A.L. **$8.95**



No. 1110 Extra fine flat 3/4" nose, 3/32" tip width. 5" O.A.L. **$8.95**

No. 1024 WIRE CUTTER



$35.00

The same specifications as the popular ETM No. 1000, but with a very slim dished-out nose for getting into difficult places. Features a new stop screw to prevent plier damage. For cutting .032" silver, nickel, copper and gold, .012" x .030" nickel ribbon, .025" brass, Dumet, Kovar. Made of quality tool steel hardened to R/C 64-66.

Please send . . . . . copies of your 1971 catalog for myself (other purchasing agents or departments).

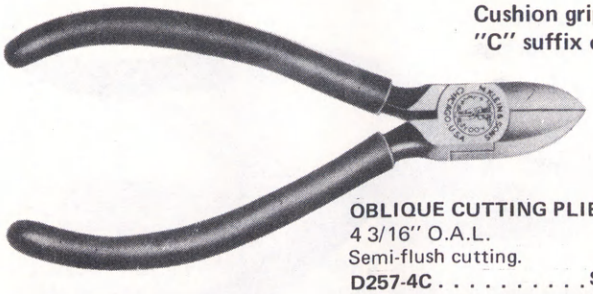
NAME. . . . . .
TITLE. . . . . .
COMPANY . . . . . .
ADDRESS. . . . . .
CITY. . . . . STATE . . . . . ZIP . . . . . .

ALL PRICES SUBJECT TO CHANGE F.O.B. PHILADELPHIA

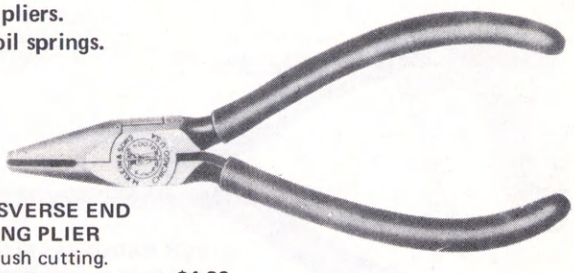
KLEIN PLIERS

QUANTITY DISCOUNTS: 1 - 3 Net 4 - 12 10% 13 - 25 15% 26 - 99 20% 100 + Ask for quotations

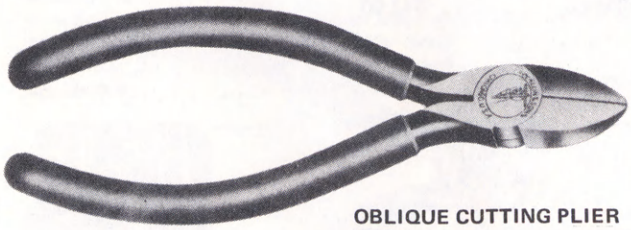
Cushion grip handles supplied on all pliers.
"C" suffix on catalog No. denotes coil springs.



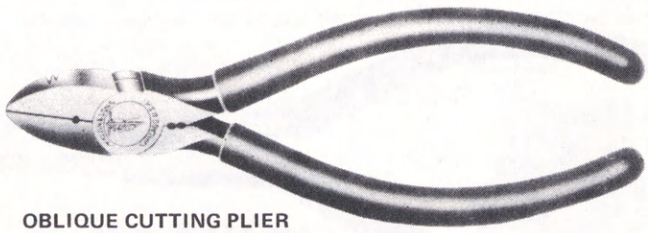
OBLIQUE CUTTING PLIER
4 3/16" O.A.L.
Semi-flush cutting.
D257-4C $4.05



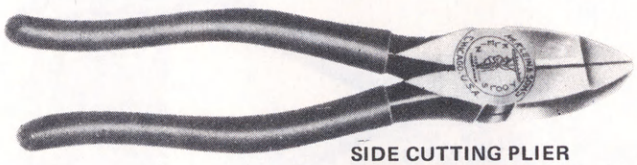
TRANSVERSE END CUTTING PLIER
Semi-flush cutting.
D224-4½C $4.60



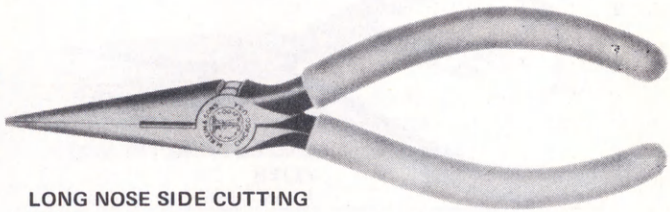
OBLIQUE CUTTING PLIER
5½" O.A.L.
Flush cutting.
D210-5C $5.10
Narrow nose.
D202-5 . . . . . .$4.20
D202-5C 4.50



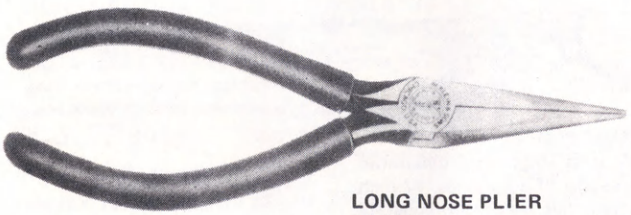
OBLIQUE CUTTING PLIER
Bell system type. With "W" stripping notches, sleeve openings, and .052" skinning hole.
D202-5½"-SW $5.20
D252-6-SW. 5.50



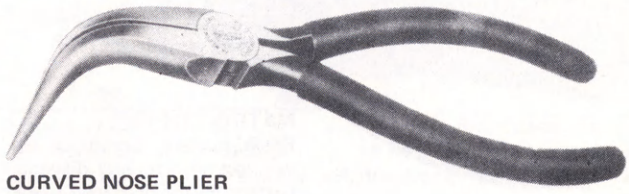
SIDE CUTTING PLIER
NE type (streamlined). In two sizes 7½" and 8½" O.A.L.
D201-7NE . . . . . .
D201-8NE . . . . . .
Rivet is placed closer to jaws for increased leverage.
D213-8NE $7.20



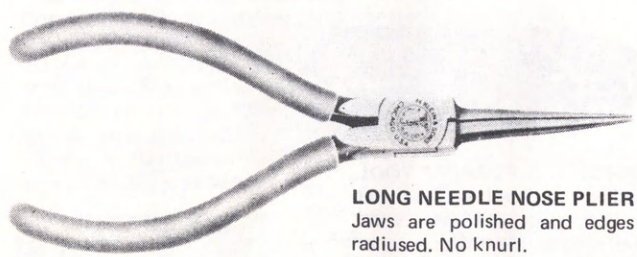
LONG NOSE SIDE CUTTING PLIER
5 9/16" O.A.L.
D203-5C $4.40



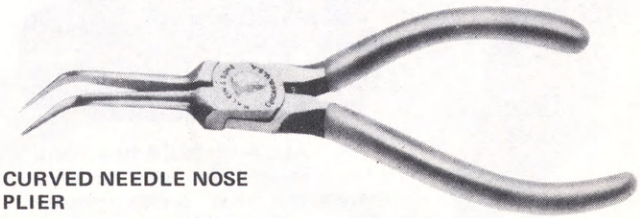
LONG NOSE PLIER
D301-6C $4.05
D322-4½. 3.50
D322-4½C 3.70



CURVED NOSE PLIER
6¼" O.A.L.
D302-6 . . . . . $4.60



LONG NEEDLE NOSE PLIER
Jaws are polished and edges radiused. No knurl.
D328-5½C $4.70
6 5/8" O.A.L.
D301-6-SCP $5.00

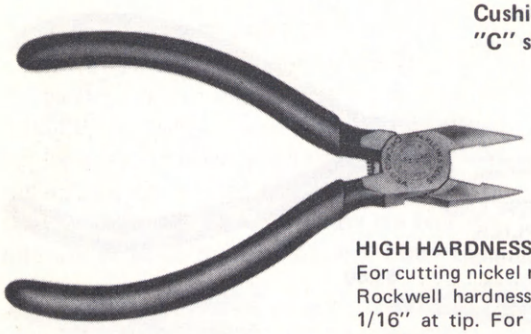


CURVED NEEDLE NOSE PLIER
Inside jaws are polished and edges radiused. No knurl.
D338-5½C $5.90

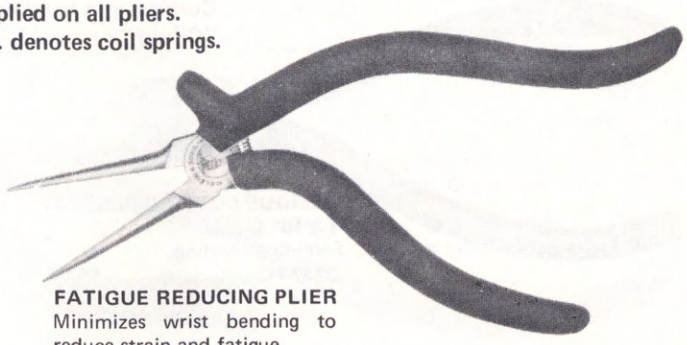
KLEIN PLIERS

QUANTITY DISCOUNTS: 1 - 3 Net 4 - 12 10% 13 - 25 15% 26 - 99 20% 100 + Ask for quotations

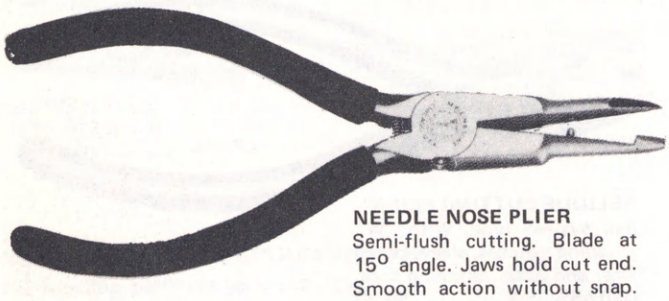
Cushion grip handles supplied on all pliers.
"C" suffix on catalog No. denotes coil springs.



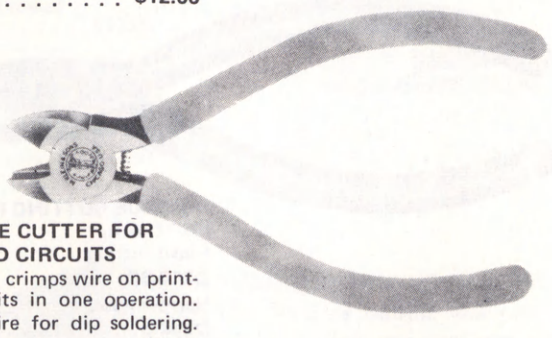
HIGH HARDNESS PLIER
For cutting nickel ribbon wire. Rockwell hardness C60. Nose 1/16" at tip. For use in confined space.
D230-4C $6.60



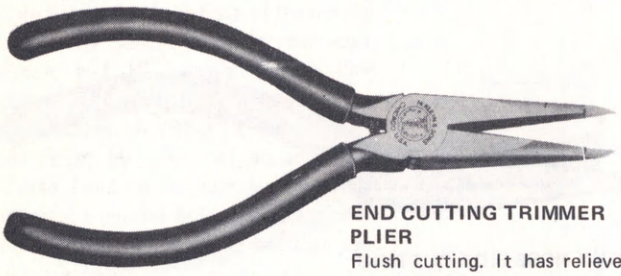
FATIGUE REDUCING PLIER
Minimizes wrist bending to reduce strain and fatigue.
D366-6C $12.00



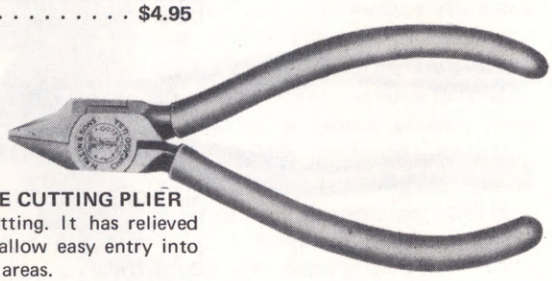
NEEDLE NOSE PLIER
Semi-flush cutting. Blade at 15° angle. Jaws hold cut end. Smooth action without snap.
D261-6C $6.70



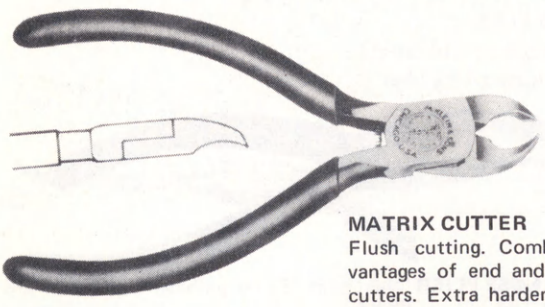
OBLIQUE CUTTER FOR PRINTED CIRCUITS
Cuts and crimps wire on printed circuits in one operation. Holds wire for dip soldering.
D052-C. $4.95



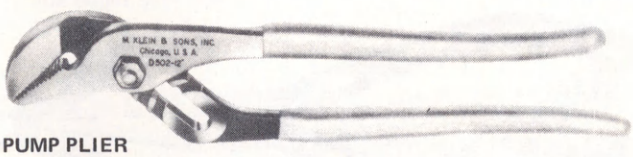
END CUTTING TRIMMER PLIER
Flush cutting. It has relieved back to allow easy entry into confined areas.
D211-6C $5.75



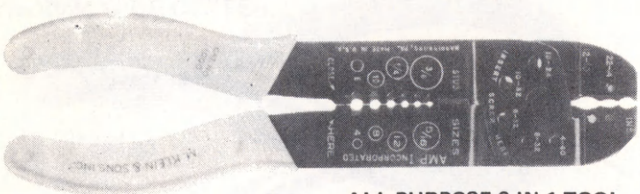
OBLIQUE CUTTING PLIER
Flush cutting. It has relieved back to allow easy entry into confined areas.
D219-4C $5.10
Same as D219-4C except without relieved back.
D209-4C $4.95



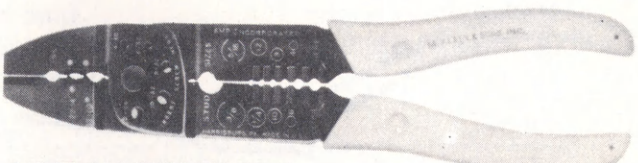
MATRIX CUTTER
Flush cutting. Combines advantages of end and diagonal cutters. Extra hardened blade for cutting nickel ribbon.
D264-4C $7.50



PUMP PLIER
10 inch length has maximum capacity of 1¾ inches. 12 inch length has maximum capacity of 2 1/8 inches.
D502-10 . . . . . $3.90
D502-12 . . . . . 4.80



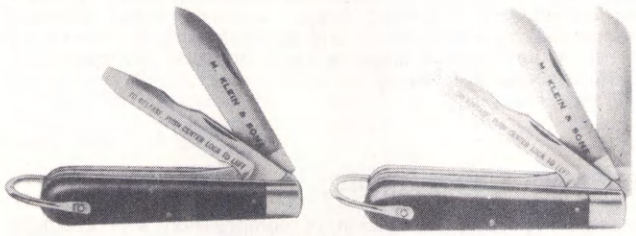
ALL PURPOSE 6-IN-1 TOOL
Gauges wire sizes, measures stud sizes, crimps terminals, shears bolts, cuts and strips wire. 7½" O.A.L.
#1000-MK $7.25



SUPER ALL PURPOSE TOOL
Crimps insulated terminals and splices. Cuts and strips wire. Cuts bolts. Terminal locater positions barrel to insure proper location of crimp.
#1002-MK $8.50

ACCESSORIES

QUANTITY DISCOUNTS: 1 - 3 Net 4 - 12 10% 13 - 25 15% 26 - 99 20% 100 + Ask for quotations



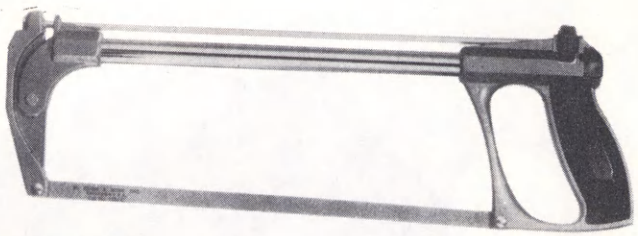
"XELA" ELECTRICIANS KNIFE

Made of high grade, tempered cutlery steel. When the screwdriver is opened, it locks automatically. Blade length 2½", screwdriver length 3". 3¾" O.A.L.

No. 1550-2. . . . . $2.75

Spearpoint knife blade. A sheepsfoot blade and a screwdriver blade. Screwdriver blade locks automatically when opened. Length of long blade 2½", short blade 2" and screwdriver 3". 3¾" O.A.L.

No. 1550-6. . . . . $3.50



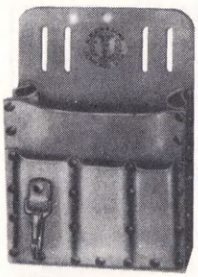
HACK SAWS

The world's finest hack saw. Cuts through to a flat surface. Thumb adjustment of blade. Frame of die cast aluminum. Comfort grip handle and comfortable front end grip permits two hand operation. Uses 12 inch blade. Blade storage chamber.

No. 701-12 . . . . . $5.50

High quality hack saw blades 12" long. 100 per box. Either 18, 24 or 32 teeth per inch.

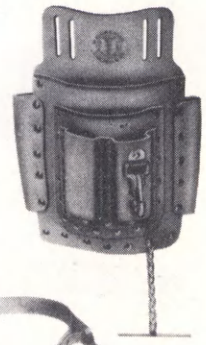
No. 1218 . .$19.00 No. 1224 . .$19.00 No. 1232 . .$19.00



ELECTRICIANS POCKETS

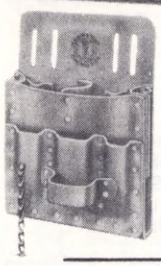
High quality leather pouch. Has extra large gussted utility pocket, three plier pockets, two screwdriver pockets and knife snap.

No. 5127 . . . . . .$5.25



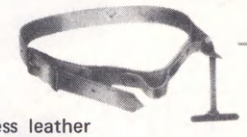
Curved to fit the hip. Large and small utility pockets, two plier pockets and two screwdriver pockets are provided. Pouch has chain tape thong and knife snap.

No. 5168 . . . . . .$6.25



Finest chrome leather; soft and pliable. Two large utility gusseted pockets, two screwdriver pockets, two tool loops, three plier pockets and one chain tape thong.

No. 5166 . . . . . .$6.75



LEATHER TOOL BELT

A light weight belt of genuine harness leather with tool loops and tape thong. In two sizes: 32" to 40" and Large 38" to 46".

No. 5207M $4.00

No. 5207L 4.00

ADEL NIBBLING TOOL CUTS SHEET METAL LIKE A PUNCH AND DIE

- IDEAL FOR TEMPLETS, SHIMS, MODEL PARTS
- RADIO CHASIS
- AIR DUCTS
- MECHANICAL PARTS
- PLASTIC SHEETS

Start with a 7/16" hole then **"NIBBLE"** to the size required. It cuts **CLEAN** like a punch and die. No strain or distortion is added to the edges or to the original form.

CUTS round, square, or irregular holes to any SHAPE, any SIZE over 7/16". **NOTCHES** clearance on flanges of cabinets or air ducts. **TRIMS** undersized holes to fit parts. Capacity - steel 18 ga. (.046) max. aluminum, copper, plastic 1/16".

1 - 3 . . . . $4.50 4 - 11. . . . $4.20 12 - 71. . . . $4.00 72+ $3.80

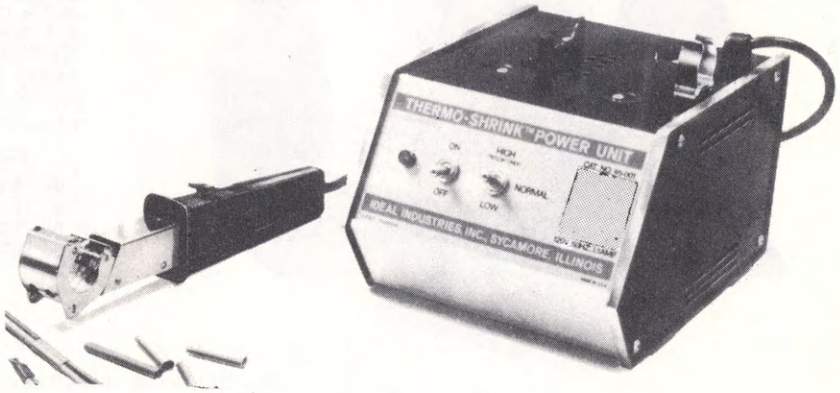
CUTS HOLES to any SHAPE any SIZE

THERMO-SHRINK

Low cost radiant heat for all heat shrinkables.

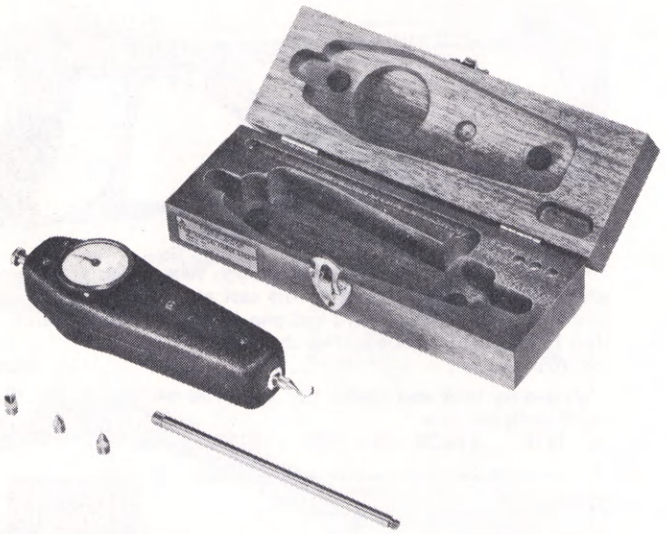
- Concentrated heat zone
- Lightweight, easy-to-use
- Long life, low cost heating element
- Selective heat ranges
- No moving air, noise, vibration
- Economical, draws only 1.5 amps maximum
- Plug-in replacement element
- No motors, no brushes

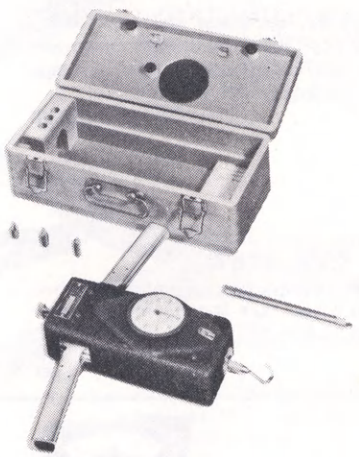
Provides a versatile, low cost source of radiant heat for shrinking a wide range of materials up to 5/8" O.D. Three heat ranges, covering everything from Mylar to Teflon. Constant trickle current keeps the element pre-heated. When the thumb switch is pressed, instant radiant heat goes to "U-shaped heat zone". Work can be seen by the operator at all times. The heating element is a plug-in type and can be replaced in seconds. Weights only 7 oz., and is attached to the power unit with a 46" cord. A tool rest is provided on top of the power unit, or the tool can be mounted on a bench top stand (optional).

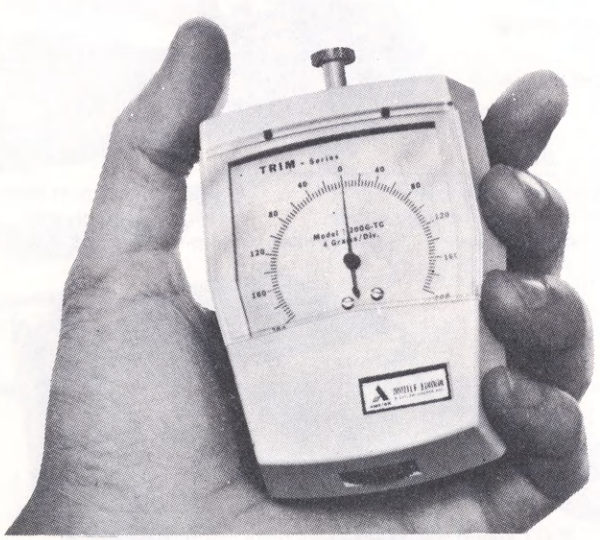


No.	Description	Price
46-001	Thermo-Shrink Unit	$59.95 ea.
46-901	Replacement Heating Element	9.95 ea.
46-911	Bench Stand for Heating Element	4.95 ea.

HUNTER FORCE GAGES — MECHANICAL







A complete line of compression and tension testers for measuring connectors, solderless wraps, soldered joints, adhesive bonds, miniature welds, metal wire and strip, crimped terminals, etc. . . . on production lines, in inspection and quality control departments and in labs.

SERIES "L" FORCE GAGES

Measures resistance to tension or compression with accuracy of ±0.5% of full scale. Features "Hold-at-Maximum" indicator control button which holds maximum force reading. Unit comes with six S.S. end fittings which adapt gage for various media. Fitted wooden case is included. Black finish steel case. Size: 6 1/2" x 2 1/6" x 1 3/4". Shipping weight: 3 lbs.

RANGE	DIAL DIVISIONS	VALUE PER DIVISION	MODEL NO.	PRICE EA.
0- 500 gms. 0-1,000 gms.	100 100	5 gms. 10 gms.	LKG-05 LKG-1	87.50
0- 14 kgms.	140	100 gms.	LKG-14	115.00
0- 16 ozs. 0- 32 ozs. 0- 80 ozs. 0- 5 lbs. 0- 10 lbs.	128 128 80 100 100	.125 oz. .25 oz. 1.0 oz. .05 lb. .10 lb.	LO-1 LO-2 LO-5 L-5 L-10	87.50
0- 20 lbs. 0- 30 lbs.	100 120	.20 lb. .25 lb.	L-20 L-30	115.00

SERIES "D" FORCE GAGES

Measures resistance to tension or compression with accuracy of ±0.5% full scale. They include handles for portable application, "Hold-at-Maximum" indicator, Bezel zero adjust, S.S. end fittings and wooden case described above. Black finish steel case. Size: 3 9/16" x 8 7/16" x 3 5/32". Shipping weight: 11 lbs.

RANGE	DIAL DIVISIONS	VALUE PER DIVISION	MODEL NO.	PRICE EA.
0- 50 lbs.	100	.50 lb.	D-50	252.00
0- 75 lbs.	150	.50 lb.	D-75	
0- 100 lbs.	100	1.0 lb.	D-100	
0- 150 lbs.	150	1.0 lb.	D-150	
0- 200 lbs.	100	2.0 lbs.	D-200	

"TRIM" SERIES FORCE GAGES

Measures "push or pull" loads down to 1 gram, accurate to ±2% of full scale. Weight (7 ozs.) and size (2 13/16" x 3 13/16" x 1 1/4") make it a compact unit for on-the-spot measurement. Case is high-impact ABS plastic with steel chassis. Integral zero-adjust wheel permits tare weight compensation. Shipping weight: 1 1/2 lbs.

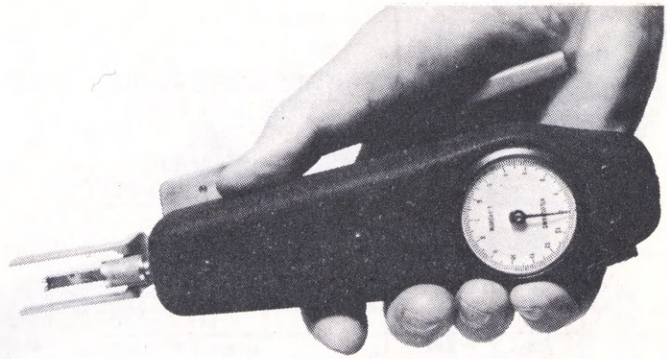
RANGE	DIAL DIVISIONS	VALUE PER DIVISION	MODEL NO.	PRICE EA.
0- 50 gms.	50	1 gm.	T-50G-TC	43.00
0- 100 gms.	50	2 gms.	T-100G-TC	
0- 200 gms.	50	4 gms.	T-200G-TC	
0- 500 gms.	50	10 gms.	T-500G-TC	

HUNTER TEST APPARATUS — MECHANICAL

SERIES "TWM" WRAPPED WIRE CONNECTION TESTER

Measures gripping strength of solderless wire-wrap connections with accuracy of ±0.5% of full scale. Special fixture with hand lever determines failure force value which is retained on gage until reset. Request Form A-1920 to supply required pin dimensions. Includes Bezel zero adjust and fitted wooden case. Shipping weight: 4 lbs.

RANGE	DIAL DIVISIONS	VALUE PER DIVISION	MODEL NO.	PRICE EA.
0- 14 kgms.	140	100 gms.	TWM-Kg-14	272.00
0- 20 lbs.	100	.20 lb.	TWM-20	
0- 30 lbs.	120	.25 lb.	TWM-30	

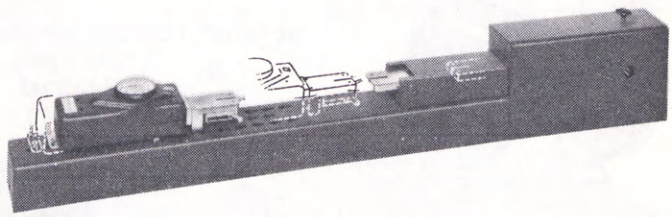


SERIES "TTH" PULL TESTERS

Portable air operated tension testers for fast measurement of the breaking strength of electrical leads, terminals, connectors, wire wraps, etc. *Note:* Gage for unit must be selected from Series "D" listing and cost added. Unit is equipped with 1/4" wide tensile grip on air motor end. Base provides 2" stroke and can accept specimens up to 12 7/8". Required air supply: 60 psig. min.; 160 psig. max. (1/4" NPT connection). Includes Hydro-Check valve which permits reduced speeds down to 1/10" per minute. Steel chassis has black finish. Shipping weight: 56 lbs.

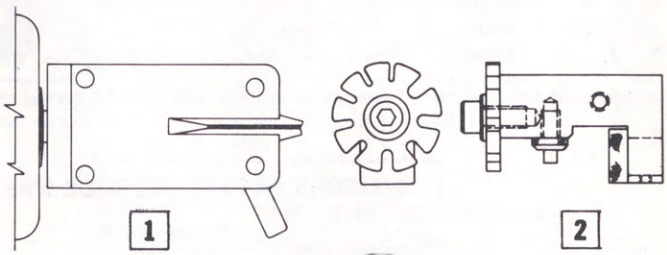
DESCRIPTION	MODEL NO.*	PRICE EA.*
TTH-Series with Hydrocheck	08 20 ——	565.00

*Add "D" Gage Model No. and Price



ACCESSORIES FOR TTH PULL TESTERS

	DESCRIPTION	MODEL NO.	PRICE EA.
1	1/4' WIDE TENSILE GRIP. For use with "D" Force Gage. 500 lb. capacity 5/16-18 female threaded connection.	ML-1700	135.00
2	TERMINAL TESTING TURRET ASSEMBLY. Nine notches from .064" to .218" wide.	ML-1785	50.00
	AIR FILTER REGULATOR-LUBRICATOR UNIT.		25.00

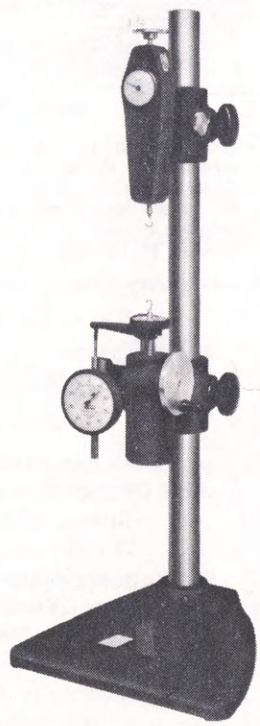


SERIES CTM UNIVERSAL TESTING MACHINES

Manually operated, portable compression or tension tester for measurement of micro-circuit components, wire samples, crimp-on connectors, solder joints, switches, peel strength of adhesives or printed circuit laminates. *Note:* Gage for unit must be selected from Series "L" listing and cost added. Dial indicator attachment measures up to 1" deflection in .001" increments. Sturdy cast iron base finished in black; support column is S.S. Size: 27" x 10" x 10". Shipping weight: 35 lbs.

DESCRIPTION	MODEL NO.*	PRICE EA.*
Series CTM with dial indicator	02 40 ——	423.50

*Add "L" Gage Model No. and Price

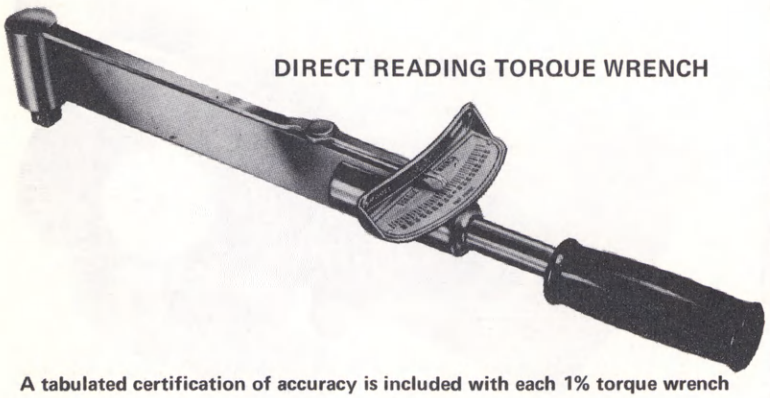


Send for complete information on all test units.

STURTEVANT TORQUE WRENCHES

See page 54 in Catalog #16 for other torque wrenches.

DIRECT READING TORQUE WRENCH



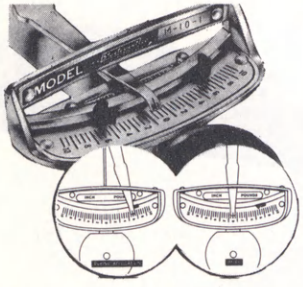
A tabulated certification of accuracy is included with each 1% torque wrench

No gears or leverage devices with changing frictional properties. It may be used accurately with adapters and extensions because of the pivoted handle which concentrates the load position. Federal Specification GGG-W-686b, Type 1, Class I, Style A.

Torque Capacity	Steps Of Graduation	Drive Size (Ins.)	Lever Arm Length (Ins.)	Fed. Spec. Size No.	± 1% Accy. No.	± 1% Accy. Price	± 2% Accy. No.	± 2% Accy. Price
In.-Gms.	In.-Gms.							
0-80	5	1/4	3-5/8†		F80-I-G-S	P.O.R.	F80-I-G	P.O.R.
In.-Oz.	In.-Oz.							
0-32	2	1/4	6-3/16†		F32-I-O-S	$45.00	F32-I-O	$25.00
In.-Lbs.	In.-Lbs.							
0-10	1/2	1/4	6†		F10-I-S	45.00	F10-I	25.00
0-50	2	3/8	6†	2	F50-I-S	45.00	F50-I	25.00
0-100	5	3/8	6-1/2†	4	F100-I-S	46.00	F100-I	26.00
Ft.-Lbs.	Ft.-Lbs.							
0-25	1	1/2	13-1/2	16	F25-S	54.00	F25	34.00
0-50	2	3/8	13-1/2	17	F50-S	54.00	F50	34.00
0-100	5	1/2	15	18	F100-S	56.00	F100	36.00

†Measure when computing for adapters and extensions

MEMORY TORQUE WRENCHES



No Parallax Error ● Withstands Repeated Fracture Testing

Comes with ball handle		Comes with regular handle
M32-1-0	M25-1	M25
M160-1-0	M50-1	M50
	M100-1	M150

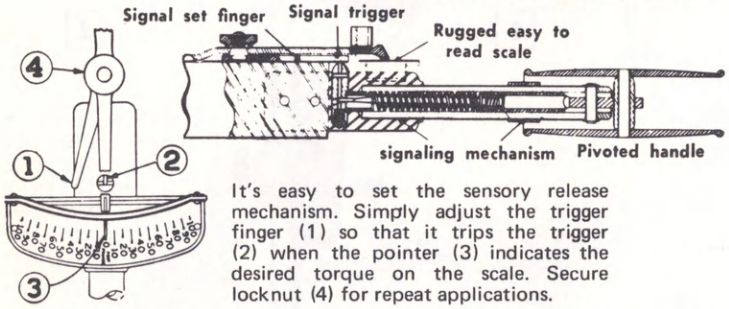
A tabulated certification of accuracy is included with each 1% torque wrench

The memory pointer remains accurately placed at the reading of peak torque even when exposed to the shock of component failing tests. The memory pointers exert a constant spring pressure against the guide track.

Torque Capacity	Steps Of Graduation	Drive Size (Ins.)	Lever Arm Length (Ins.)	± 1% Accy. No.	± 1% Accy. Price	± 2% Accy. No.	± 2% Accy. Price
In.-Oz.	In.-Oz.						
0-32	2	1/4	6-3/16†	N.A.	——	M32-I-O	$28.00
0-160	10	1/4	6†	M160-I-O-S	$48.00	M160-I-O	28.00
In.-Lbs.	In.-Lbs.						
0-25	1	3/8	6†	M25-I-S	48.00	M25-I	28.00
0-50	2	3/8	6†	M50-I-S	49.00	M50-I	29.00
0-100	5	3/8	6-1/2†	M100-I-S	50.00	M100-I	30.00
Ft.-Lbs.	Ft.-Lbs.						
0-25	1	3/8	13-1/2	M25-S	56.00	M25	36.00
0-50	2	3/8	13-1/2	M50-S	57.00	M50	37.00
0-150	5	1/2	18	M150-S	60.00	M150	40.00

†Measure when computing for adapters and extensions

SENSORY RELEASE TORQUE WRENCH



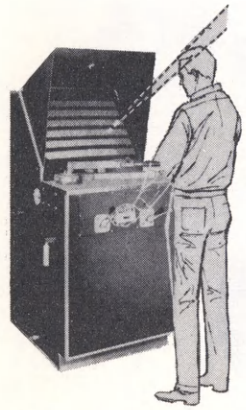
It's easy to set the sensory release mechanism. Simply adjust the trigger finger (1) so that it trips the trigger (2) when the pointer (3) indicates the desired torque on the scale. Secure locknut (4) for repeat applications.

A tabulated certification of accuracy is included with each 1% torque wrench

The sensory release torque wrench with the built-in torque tester. For repeat applications to the same torque. All models may be used as direct reading torque wrenches. May be used accurately with adapters and extensions because of the pivoted handle which concentrates the load position. Federal Specification GGG-W-686b, Type 1, Class I, Style B.

Torque Capacity	Steps Of Graduation	Drive Size (Ins.)	Lever Arm Length (Ins.)	Fed. Spec. Size No.	+ 1% Accy. No.	+ 1% Accy. Price	+ 2% Accy. No.	+ 2% Accy. Price
In.-Lbs.	In.-Lbs.							
0-50	2	3/8	6†		N.A.	——	S50-I	$36.00
0-100	5	3/8	6-1/2†	1	S100-I-S	$58.00	S100-I	38.00
Ft.-Lbs.	Ft.-Lbs.							
0-25	1	3/8	13-1/2		S25-S	60.00	S25	40.00
0-50	2	1/2	13-1/2	5	S50-S	63.00	S50	43.00
0-100	5	1/2	15	7	S100-S	65.00	S100	45.00

†Measure when computing for adapters and extensions



OPTICAL TORQUE TESTER
SERIES "B"

All testers utilize an air-hydraulic automatically controlled loading system to load torque wrenches. Optically indicates the actual torque developed on a 17 x 23" screen. Low inertia temperature controlled measuring element. Screen contains 6 dual capacity scales, 20 inches long. When loaded to full capacity, the torque indicator progresses from one scale to the next for a full 120 inches of 10-foot long scale. Accuracy to 1/4 of 1% of reading. Lab accuracy and production speed. Assessories available upon request.

- ACCURACY TO 0.25% OF READING
- READING SCALE 10 FEET LONG
- CONTROLLED LOAD
- READINGS FROM 0 TO 500 FT. LB.

MODEL	DESCRIPTION	PRICE
OTT250-1	0 to 4000 inch-grams 0 to 250 inch-pounds	$8,500.00
OTT165	0 to 1980 inch-pounds 0 to 165 foot-pounds	8,500.00
OTT500	0 to 6000 inch-pounds 0 to 500 foot-pounds	8,500.00
OTT69-MKG	0 to 500 foot-pounds 0 to 69 meter-kilograms	8,500.00

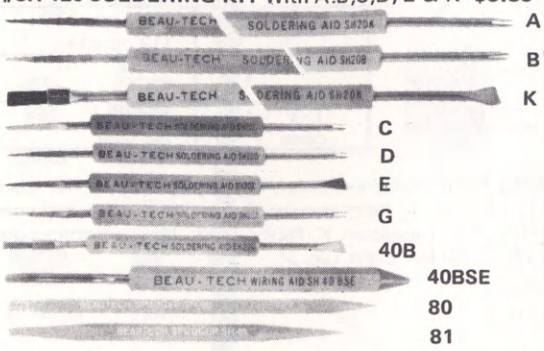
PRODUCTION TOOLS AND ACCESSORIES

See page 78-86 in Catalog #16 for other items.

SOLDERING AIDS

Tips specially designed for the extensive soldering operations of the electronic industry. Both ends are insulated from one another, are hard chrome plated to shed solder, and are twist proof. Non-slipping, non-rolling "HEX" handles.

#SH-120 SOLDERING KIT With A,B,C,D, E & K **$5.35**



	STANDARD	USER NET	24 RATE	144 RATE
SH-20A	Straight Tip (Fed. Stock #FSN-5120-610-5116)	$ .98	$ .88	$.79
SH-20B	Angled Tip (Fed. Stock #FSN-3439-633-6232)	.98	.88	.79
SH-20K	Brush & Scraper Tip (Fed. Stock #FSN-5120-767-9126)	.98	.88	.79
	PRINTED CIRCUIT			
SH-20C	Printed Circuit Type Straight Tip (Fed. Stock #USAF-3439-562-7066)	.95	.85	.66
SH-20D	Printed Circuit Type Angled Tip (Fed. Stock #USAF-3439-562-7067)	.95	.85	.66
SH-20E	Printed Circuit Type Scraper Tip	.95	.85	.66
SH-20G	Printed Circuit Type Brush & Scraper	.92	.83	.74
SH-40-B	Wiring Aid & Forked end	1.19	1.01	.89
SH-40-BSE	Wiring Aid & Single End	.98	.85	.79
SH-80	Spudger Red Fiber Construction	.55	.47	.42
SH-81	Spudger Red Fiber Construction (Fed. Stock #FSN-5120-293-3112	.55	.47	.42

MICRO-MINIATURE TOOLS

SH-400K Kit Medium diameter shanks (approx. .030"). Tips are swaged tool steel with compacted grain structure, heat treated in Swedish manner; ground and plated with copper, nickel and 24-K gold. Used in instrument assembly, micro-production, solid state electronic production, white room operations, lab, microscopy, etc. Tools and handles may be ordered separately.

Kit contains: 10 different tips, 2 handles, sharpening stone and fitted case **$58.50**

SH-480 India Sharpening Stone $2.85

Needle Point
SH-413 Med. dia., short
SH-414 Med. dia., medium
SH-415 Med. dia., long

SH-405 Handle. . . . $9.75

SH-421 2.0 Root Knife

SH-424 3.0 Root Knife

SH-427 Graver

SH-430 Sharp Edged Spade

SH-436 Sharp Edges Chisel

SH-450 Bifurcated Manipulator

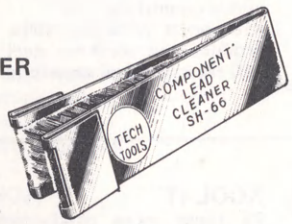
SH-457 180° Hook

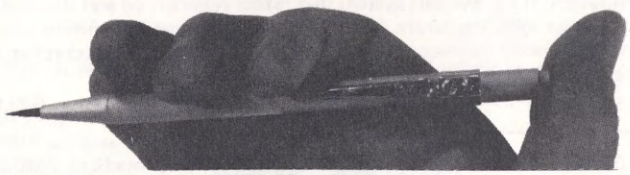
ALL TIPS ARE $4.00 ea.

SH-66 COMPONENT LEAD CLEANER

NASA NPC-200-4 Specifies that component leads must have oxides removed before soldering. This unique and inexpensive stainless steel hand tool complies with these NASA requirements.

SH-66 . .$1.50 ea. 10 & up . .$1.35 ea.





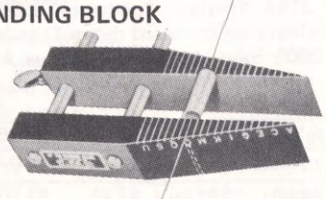
RETRACTABLE SCRIBERS

Retractable feature minimizes danger while carrying. Point is solid tungsten carbide. Four groove settings on shaft allow for point adjustments after regrinding. **$3.95**

BY-BUK COMPONENT LEADS BENDING BLOCK

For bending leads on resistors, diodes, capacitors, etc. to accurately register with holes in printed circuit panels. Adjustable to 1¾". 1" x 3 3/8" x 5 3/8".

Model 700 . . . . . **$29.50**



SPEEDMIKE

Direct reading micrometer from 3 windows. Indicates in thousandths (.001") of an inch. Graduations on the thimble provide for simple interpolations for reaching ten thousandths. Made in the U.S.A.

No. 501 . . . . . **$34.00**
No. 501-001 w/carbide jaws . . . . . **.39.50**

ANGLEMETRIC MICROMETER

The micrometer that gives the advantage of ENGLISH and METRIC readings with one micrometer. The thimble is divided into 50 divisions each representing .0004" or .01 mm. The English Scale on the sleeve is divided into 50 divisions each representing .5 mm.

$21.50

NEO BALL ADAPTER

Measure curved surfaces with standard outside micrometers. Molded neoprene ball retainer with reinforced band adds holding power. Hardened and lapped chrome steel ball, .2000" dia. Fits all micrometers with spindle diameters of .0235", .250" and .270".

No. 156 Ball Attachment . . . . . **$1.75 ea.**

CHEMICAL PRODUCTION AIDES

MINIT-FOAM AEROSOL SPRAY URETHANE FOAM

Nothing like this aerosol urethane foam is available anywhere else. Formulations are easy to carry, easy to mix and easy to use. Ideal as a repair kit or small job unit. Minit Foam keeps catalyst and urethane liquid in separate sealed containers, stays fresh indefinitely. Pre-measured contents are mixed in the container, providing an aerosol spray with the same positive adhesion and high quality as other fine rigid urethane foams. Complete directions are provided on every package. Sprayed as a liquid, Minit Foam immediately begins to form millions of tiny air cells surrounded by rigid, plastic walls. 12 oz. kit will foam approximately 1/2 cubic foot (20 times original volume).

- Effective Insulation
- Light in Weight
- Resists Heat and Cold
- Adhesive
- Meets ASTM Designation D1692-59T

Description	12 kits per case (12 oz. cans)
Less than 1 case	**$3.98** per kit
1 - 9 cases	**$44.00** per case

SELF-EXTINGUISHING Minit Foam expansion depending on free rise space available. Because it does not shrink at temperatures below zero this product is especially recommended for refrigeration insulation. Density 2.0; Insulation K factor 0.12; Max. recommended temperature 280°F. Color, White.

NON-BURNING Minit Foam expansion depending on free rise space available. Fire resistant to temperatures up to 280°F. for sustained periods. Density 2.6; Insulation K factor 0.12; Max. recommended temperature 280°F. Color. Light Tan.

SODER-MASK Solder Resist & Coating Mask

Protects contact, holes and areas that must be kept free of solder during soldering operation. A specially formulated elastomer, it forms a tough, durable, high tensile strength coating that withstands temperatures to 500°F. Easy to apply with brush, applicator or syringe. It holds tightly during soldering and is removed by peeling or rubbing. Leaves no residue and won't tarnish or stain gold, silver, nickel, copper and tin-nickel. Also effective as a conformal coating or paint resist. It withstands a bake temperature of 300°F. for several hours.
Free syringe and needle with 2 bottle order

#64-4 oz.—Solvent Base	1-9 **$2.49**	10-49 **$1.99**	50 + **$1.49**
#75-4 oz.—Water Soluble	1-9 **$2.49**	10-49 **$1.99**	50 + **$1.49**

Larger quantities available.

SHIELDING AND ADHESIVE KIT

$65.00

Kit for electro-static and electro-magnetic shielding and adhesive applications (or tests). Includes **#3021** conductive epoxy for fast setting at room temperature and **#3044** conductive epoxy with a rapid low-temperature cure with elevated temperature electrical & physical properites.
#3050 silver filled, single component, heat activated epoxy lacquer for elevated temperatures; **#3042** silver filled vinyl based coating for applications requiring a high degree of flexibility (shielding wire, etc.); **#40** acrylic based silver conductive for general purpose shielding applications, **#3030** an acrylic based solderable conductive coating. The general purpose shielding coating **(E-Kote 40)** is supplied in an 8-oz. aerosol spray can; other paints and adhesives are in one ounce quantities.
Kit comes with complete technical information on each individual product and stainless steel mixing spatula. **(See page #99 in catalog #16 for individual descriptions).**

PROPERTIES OF KOOL-IT
Thermal Conductivity cal/sec/cm^2/°C/cm . .006
Vol. Resistivity ohm-cm. . . . . 10^{11}
Temp. Range °F . . . . . 100 to 300
Diel. Strength v/mil 400
Density gm/cm^3 . . . . . 1.5

KOOL-IT ADHESIVE HEAT TRANSFER DEVICE

15 times more conductive than silicone grease. A high electrical insulation. It's a one part system that resists weather, oil and slat water. Eliminates mica insulators. Minimizes circuit failures and enables use of less expensive transistors which are rated and priced according to their capacity to dissipate heat.
1 oz. tube. . . . . **$5.00** Package of 10 1 oz. tubes **$35.00**

EPOXIES IN BIPAX

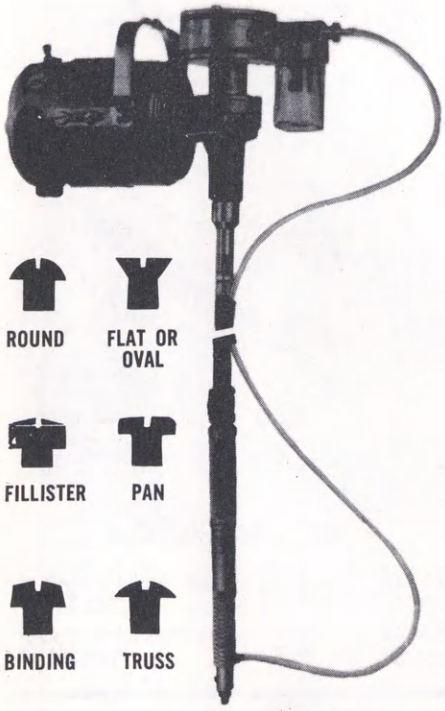
- Ready to use
- Precisely pre-measured
- Stops mixing mistakes
- Ends epoxy mess and fuss

A two compartment flexible package for epoxy adhesive and encapsulating systems. Effective for bonding and potting applications, or your own formulations, are available in BIPAX. Write for information on applications or problem.

No. 2101 General Purpose Epoxy Adhesive Clear unfilled medium viscosity epoxy adhesive system. Room temperature cure.
No. 2112 Epoxy Staking Compound (Rigid) Translucent color, putty-like thixotropic epoxy with superior electrical and structural properties. Room temperature cure.
No. 2151 Thermal Conductive Epoxy Adhesive (Semi-Rigid) Electrical insulator for strong bonds to metals and ceramics. Improve heat transfer of mounted electronic parts. Room temperature cure.
No. 2153 Thermal Conductive Epoxy Adhesive (Rigid) Excellent electrical insulation with enhanced thermal conductivity. Room temperature cure.
No. 2902 Silver Epoxy Conductive Adhesive Strong, reliable high conductivity, low electrical resistance bonds to most surfaces. Room temperature cure.

No.	A-2101	B-2101	C-2101	A-2112	B-2112	C-2112	A-2151	B-2151	C-2151	A-2153	B-2153	C-2153	A-2902	B-2902	C-2902
Size	2 gms.	7 gms.	28 gms.	2 gms.	7 gms.	28 gms.	2 gms.	10 gms.	40 gms.	2 gms.	10 gms.	40 gms.	2 gms.	10 gms.	20 gms
Price	$4.75	$6.50	$9.95	$5.50	$7.60	$11.95	$7.25	$9.50	$14.00	$7.25	$9.50	$14.00	$14.50	$34.00	$61.85

FOREDOM POWER SCREWDRIVER



FOREDOM MINIATURE POWER SCREWDRIVER AND NUT RUNNER

Proven in hundreds of successful applications, the FOREDOM Series 85 Screwdriver is ideal for power driving small screws and nuts from #000 to #4. Extremely quiet, lightweight and portable, the flexible shaft operated Series 85 has easily adjustable torque control from 0 to 5 inch-lbs. Especially suitable for hard to get at or extremely delicate jobs on all kinds of mechanical and electrical assemblies, electronic components, relays, switches, controls, etc.

It picks up and drives screws from #000 to #4 with or without heads; also nuts and washers. Special accessories can be designed and supplied quickly at modest cost. Driving the fastener requires only a slight pressure to engage the clutch. It automatically disengages when the correct, preset torque is reached. The motor can be reversed to remove fasteners or to drive fasteners with left-hand threads.

SQ-85, VP-1 With integral vacuum pump. Requires no outside source of air or vacuum **$195.00**
SQ-85 Same as SQ 85, VP-1 except without vacuum pickup. **$175.00**

Note—When ordering please specify type of screw head and size (#000-#4), in addition to bit and finder desired. When the screwdriver will not be used for more than 3 in.lb. of torque we recommend the 40" light duty shaft, sheath and clutch spring #10068 be specified. This will be supplied at no extra charge.

SPECIFICATIONS

- 1/10 HP reversible 1150 RPM gear motor
- 115V. AC/DC.
- Foot operated ON-OFF switch.
- 22" Flexible Shaft.
- 0-5 inch-lbs. adjustable torque (0-3 inch-lbs.
- Vacuum pickup option.
- Overhead suspension, mounting.

BITS AND FINDERS

F: Standard finder. **$4.50**

BX: Standard bit extension. Adds 5/8" to length of standard bits. **$4.50**

FX: Extended finder. For use with standard bits and hex key adaptors when equipped with standard bit extension. Adds 5/8" to length of standard finders. **$9.00**

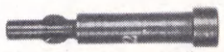
AK: Standard hex key and adaptor with replaceable key. For use with or without pickup and finder. **$2.25**

B: Standard bit for slotted screws. Must be used with finder. **$1.25**

C: Standard bit for cross recess screws for use with vacuum pickup. Must be used with finder. **$1.25**

RC: Standard bit for cross recess screws for use without vacuum pickup. Cannot be used with finder. **$1.50**

NUT RUNNERS



N: Standard nut runner. For use with or without vacuum pickup. **$3.75**

V: Standard vacuum sleeve for standard nut runners. For use when vacuum pickup is required. **$3.75**

SCREW TRAYS

FOR HEADED FASTENERS **$5.75**

FOR HEADLESS FASTENERS **$11.75**

BLANK TRAY FOR SPECIALS **$5.25**

These screw trays may be used with any type of manual or power screwdriver with self-contained, magnetic, mechanical or vacuum pickup feature. A blank tray is available for nuts or for making your own specials. Washer trays are also available.

Prefix

HEAD STYLE ▼ / SCREW SIZE ➤		#000	#00	#0	#1	#2	#3	#4
B	THREAD DIA.	.034	.047	.060	.073	.086	.099	.112
ROUND	STD. FINDER	F-15	F-17	F-19	F-20	F-21	F-22	F-23
	EXT. FINDER*	FX-15	FX-17	FX-19	FX-20	FX-21	FX-22	FX-23
	BIT—SLOTTED SCREWS	B-15	B-17	B-19	B-20	B-21	B-22	B-23
C	BIT—CROSS RECESS	—	—	—	—	C-3	C-3	C-3
	SCREW TRAY	10209	10210	10097	10098	10098	10099	10099
FLAT OR OVAL	STD. FINDER	F-16	F-18	F-19	F-20	F-21	F-22	F-23
	EXT. FINDER*	FX-16	FX-18	FX-19	FX-20	FX-21	FX-22	FX-23
	BIT—SLOTTED SCREWS	B-15	B-18	B-19	B-20	B-21	B-22	B-23
RC	BIT—CROSS RECESS	—	—	—	—	C-3	C-3	C-3
	SCREW TRAY	10209	10210	10097	10098	10098	10099	10099
FILLISTER	STD. FINDER	F-15	F-17	F-18	F-19	F-20	F-21	F-22
	EXT. FINDER*	FX-15	FX-17	FX-18	FX-19	FX-20	FX-21	FX-22
	BIT—SLOTTED SCREWS	B-15	B-18	B-18	B-19	B-20	B-21	B-22
	BIT—CROSS RECESS	—	—	—	—	C-3	C-3	C-3
AK	SCREW TRAY	10209	10210	10097	10098	10098	10099	10099
PAN	STD. FINDER	—	—	—	—	F-21	F-22	F-23
	EXT. FINDER*	—	—	—	—	FX-21	FX-22	FX-23
	BIT—SLOTTED SCREWS	—	—	—	—	B-21	B-22	B-23
	BIT—CROSS RECESS	—	—	—	—	C-3	C-3	C-3
F	SCREW TRAY	—	—	—	—	10098	10099	10099
BINDING	STD. FINDER	—	—	—	—	F-22	F-23	F-24
	EXT. FINDER*	—	—	—	—	FX-22	FX-23	FX-24
	BIT—SLOTTED SCREWS	—	—	—	—	B-22	B-23	B-24
BX	BIT—CROSS RECESS	—	—	—	—	C-3	C-3	C-3
	SCREW TRAY	—	—	—	—	10098	10099	10099
TRUSS	STD. FINDER	—	—	—	—	F-22	F-23	F-24
	EXT. FINDER*	—	—	—	—	FX-22	FX-23	FX-24
	BIT—SLOTTED SCREWS	—	—	—	—	B-22	B-23	B-24
FX	BIT—CROSS RECESS	—	—	—	—	C-3	C-3	C-3
	SCREW TRAY	—	—	—	—	10098	10099	10099
HEADLESS SET SCREWS	STD. FINDER	—	—	F-15	F-16	F-17	F-18	F-19
	EXT. FINDER*	—	—	FX-15	FX-16	FX-17	FX-18	FX-19
	HEX KEY ADAPT.	—	—	AK-6	AK-7	AK-7	AK-8	AK-8
	HEX KEY	—	—	K-1	K-2	K-2	K-3	K-3
	BIT—SLOTTED SCREWS	—	—	B-15	B-15	B-17	B-18	B-19
N	SET SCREW TRAY	—	—	10116	10117	10118	10119	10120
ALL	BIT EXTENSION*	BX-1	BX-1	BX-1	BX-1	BX-1	BX-1	BX-1

Table B **NUT RUNNERS**

	NUT SIZE** ➤	—	3/32"	3/32"	3/32"	3/16"	3/16"	1/4"
NUTS	NUT RUNNER	—	N-0	N-1	N-1	N-2	N-2	N-3
	VACUUM SLEEVE	—	V-0	V-1	V-1	V-2	V-2	V-3

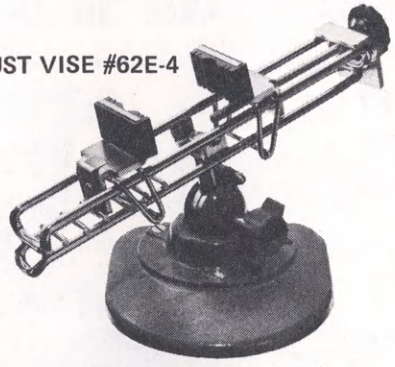
**Dimension across flats of nut

V

QUICK ADJUST VISE #62E-4

#62E-3
Without Base
$29.95

#62E-4
With Base
$39.95



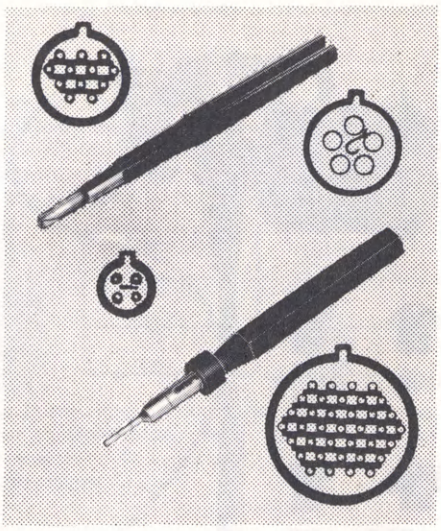
Designed for high torque holding power to insure delicate and expensive electronic assemblies. All chrome plated steel construction. Neoprene jaw pad prevents marring delicate components. The quick adjust jaw design permits the operator to adjust from the widest 7 inch opening to a smaller centered opening instantly. One jaw is quick acting, the other adjusts with a control knob in the conventional manner. . . . . .

contact insertion and removal tools

NOW! just 2 tools ...

insert and remove contacts on all types of connectors...

Amphenol, Bendix, Burndy, Cannon, Cinch, Continental, Deutsch, Elco, Flight, Pyle National, etc.



SIMPLE, SAFE, ECONOMICAL...

Designed and Precision made to Federal and Military Standards. Made of highest quality materials. Designed for ease of operation. Outstanding in performance features:

- Light aluminum handles, properly shaped for gripping.
- Solar tool steel for probes of strength and durability.
- Tips highly polished and finished to protect connectors and contacts.
- Visual indicator bands to guide tool use.
- Protective probe guards for tool when not in use.
- Tools color-coded for easy identification of contact sizes.

INSERTION

Type	Color	Size	Price
A-12	Yellow	12	$14.90
A-16	Blue	16	$14.50
A-20	Red	20	$14.00

REMOVAL

Type	Color	Size	Price
R-12	Yellow	12	$19.90
R-16	Blue	16	$18.90
R-20	Red	20	$18.50

OTHER INSERTION & REMOVAL TOOLS FOR CONTACTS, PINS, SOCKETS, ETC. CAN BE MANUFACTURED TO YOUR EXACT SPECIFICATIONS, IN ALL SIZES. FOR QUANTITY DISCOUNTS: CONTACT OUR SALES DEPARTMENT

2 tool kits available..

KA-260—3 pc. Contact Insertion Tool Kit. Consists of one ea. A-12, A-16 & A-20. . . . . **Price $39.50**

KR-260—3 pc. Contact Removal Tool Kit. Consists of one ea. R-12, R-16 & R-20. . . . . **Price $51.50**

insertion and removal tools for various components...

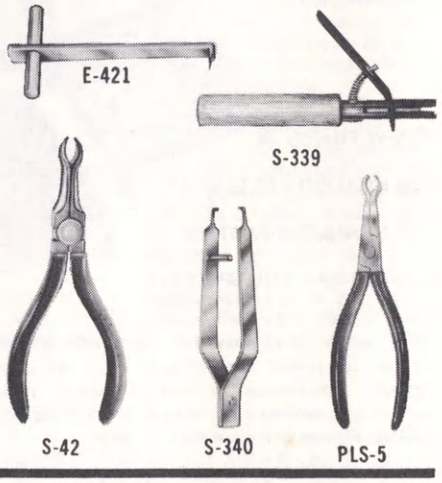
S-340 (Weco #90) EXTRACTOR, TWEEZER TYPE For miniature, micro-miniature lamps, lamp caps, numeric (digital readout) indicators, miniature P.C. type components, flat packs, I.C.'s, etc. Normally open at tip, ½". Closed position, 1/16". Has stop guide to prevent damage to components. Made of spring stainless steel, fully nickel-chrome plated. Overall length 3½". . . . . **Price $3.20**

E-421 EXTRACTOR, TERMINAL—Will extract terminals of most types. Designed with finger-grip type handle. Tip is bent to 90° angle and tapered to a fine point, with a center notch to allow for wire. "T" type handle 1½" long. Overall length 3". . . . . **Price $3.60**

S-339 (Weco #553A) SWITCHBOARD LAMP EXTRACTOR—For inserting and extracting miniature lamps. Inside dia. ⅜". Overall length 4". Handle dia. ½". . . . . **Price $2.45**

S-42 (Weco #319B) PLIER, LAMP CAP EXTRACTOR For use in inserting and extracting lamp caps, heat coils, switchboard lamps, jack assemblies and numerous other applications. Nickel-chrome plated. Overall length 5". . . . . **Price $4.96**

PLS-5 (Weco #KS2827) HEAT COIL PLIER—Designed for gripping coils, fuses and other cylindrical shaped components without causing damage. Nickel-chrome plated. Heavily insulated easy-grip handle for high voltage (to 10 KV). Overall size 6". . . . . **Price $6.24**



UNIVERSAL INSTALLATION, SERVICE, ADJUSTMENT & MAINTENANCE KIT- TK-500

NOW! with just ONE kit... you can INSTALL, SERVICE, ADJUST & MAINTAIN - Telecommunication Systems - Central Office Systems (inside and outside the plant) and switchboards.

This specially designed kit contains ALL the ESSENTIAL and BASIC tools required for the above jobs.

Now work on Cross-Bar, PBX, PABX, Penta Conta, cross-bar switch/Casino, spring relays, rotary stepping switches and many other jobs out of ONE kit!

A carefully made SELECTION of tools to fill your needs and simplify your work.

FEATURES:

TOP QUALITY TOOLS: Precision, finely machined and finished to give dependable, durable service.

REMOVABLE BOARDS: Easy selection and instant use of ALL tools.

EXTRA POCKETS FOR YOUR TOOLS.

SEPARATE COMPARTMENTS FOR NOTES & PAPERS

HANDY PLASTIC BOX FOR SMALL PARTS.

All 76 tools are securely mounted in individual pockets in a highly durable, scratch resistant BARCO case. Withstands years of abuse. Complete kit weighs only 16 lbs. and is 5-½"h. x 18-¼"w. x 16-¼"d.

TK-500 ..... Complete set of tools with case....$303.75
Tools alone.....$248.75

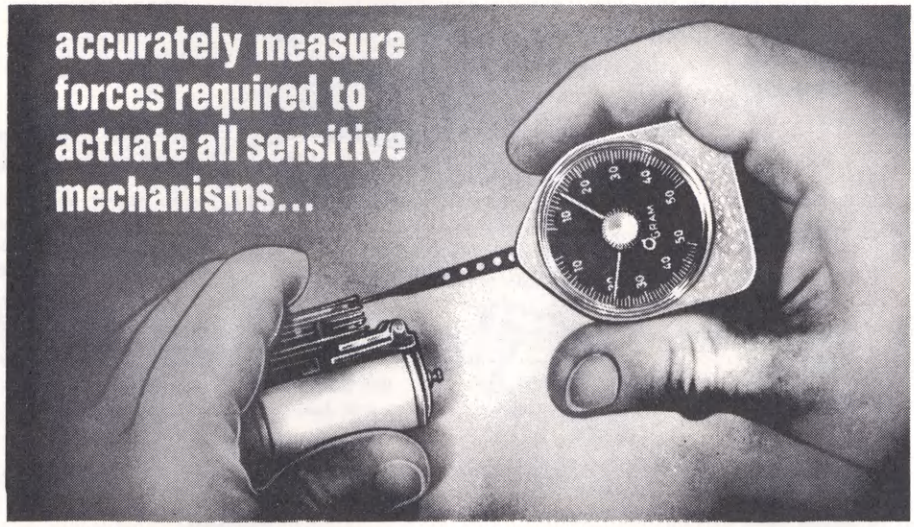
GAUGES: Dynamometer dial - Spring tension - Push-pull type

gauges are a must in all departments...

- RESEARCH & DEVELOPMENT
- PRODUCTION
- QUALITY CONTROL
- MAINTENANCE & REPAIR

use them for:

- TELECOMMUNICATION EQUIPMENT
- PRECISION INSTRUMENTS
- BUSINESS MACHINES



Produced in 2 sizes and a total of 13 ranges . . . Simple to use. Just place point of gauge arm perpendicular to force to be measured and read clockwise or counter-clockwise.

All gauges retain reading after measurement . . . No need to look at dial while measuring. Max. reading pointer moves to max. reading +0.01% and remains there until reset.

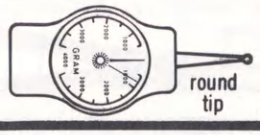
Small Gauges						Large Gauges		
Jonard type	Range (grams)	Conv. in ounces	Jonard type	Range (grams)	Conv. in ounces	Jonard type	Range (grams)	Conv. in ounces
GD-1	0-10	⅜	GD-10	10-100	3½	GD-50	61-500	18
GD-2	2-20	¾	GD-15	15-150	5¼	GD-100	100-1000	32
GD-3	4-35	1-5/16	GD-20	20-200	7	GD-200	200-2000	70
GD-5	6-50	1¾	GD-25	30-250	9	GD-400	400-4000	140
			GD-30	40-350	12			

dynamometer type

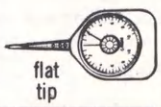
Indispensable for adjustment of pressure, starting torque or spring tension, where accuracy is required for proper operation. Simple to operate. Measures in both directions—clockwise and counter-clockwise. Gauges are equipped with maximum reading, pointer that retains reading.

Extreme precision and durability built in . . . Made of hard-tempered annealed beryllium copper springs, unbreakable glass face and protected by rigid fitted plastic case.

LARGE GAUGE
Price $31.75
1½" dial
Weight 14 oz.



SMALL GAUGE
Price $13.55
2½" dial
Weight 4½ oz.



spring type

set and accurately check tension of relay springs, electro-mechanical devices and delicate electronic components.

made in 3 basic types:

CENTER ZERO, HEAVY DUTY and PRESET TYPE.

All have engraved scales, front and back and can be used both vertically and horizontally.

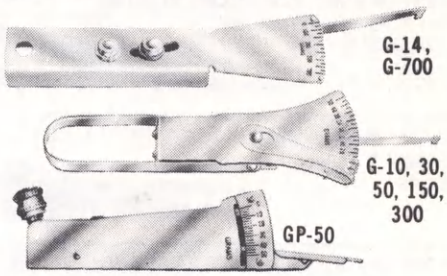
CENTER ZERO—Reads left or right. Adjustable blade, handle closes for protection. 1½" w. × 5" lg. overall.

G-10, 30, 50, 150 & 300 . . . . . **Price $7.48 ea.**
G-10 0-10 gr. **(Weco #70F)** . . . . . 1 gr. cal.
G-30 0-30 gr. **(Weco #70H)** . . . . . 2 gr. cal.
G-50 0-50 gr. **(Weco #70D)** . . . . . 5 gr. cal.
G-150 0-150 gr. **(Weco #70J)** . . . . . 10 gr. cal.
G-300 0-300 gr. . . . . 25 gr. cal.

HEAVY DUTY—Measure tension of heavier springs. Long spring arm for easy reach.

G-700 0-700 gr. **(Weco #62B)** Cal. in 50 gr. steps . . . . . **Price $8.96**

G-14 0-1,400 gr. **(Weco #158A)** Cal. in 100 gr. steps . . . . . **Price $8.96**
1½" w. × 7½" lg. overall.

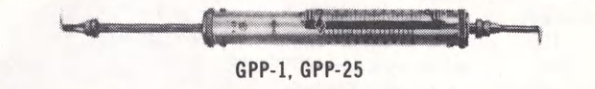


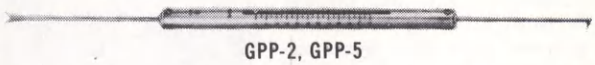
PRESET TYPE—Set to required tension by turning screw. Accurate and precise indication that will go no farther than your setting.

GP-50 (Weco dwg. #KN-102873) 0-50 Cal. in 5 gr. steps. Overall length 5¼". . . . . **Price $7.98**

push-pull type

Easy to use in confined areas. With adjustable shafts. Tubular construction with full scale accuracy. Engraved scales. Measure tension or compression of spring loaded devices, actuated levers, relays, microswitches, triggers, pull-pins, pull tests of fine wires, etc.





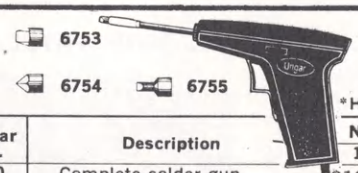
GPP-1 0-1,000 gr. **(Weco #79B) (Dwg #KN-102874)** Cal. in 50 gr. steps, ⅝" × 9¼" lg. . . . . **Price $29.80**
GPP-2 0-110 gr. **(Weco #79C)** Cal. in 5 gr. steps, ⅜" × 11" lg. . . . . **Price $14.50**

GPP-5 Two scales, 0-500 gr. and 0-16 oz. in. Cal. in 50 gr. and 1 oz. in. steps. ⅜" × 11" lg. . . . . **Price $16.50**

GPP-25 Two scales, 0-2,500 gr. and 0-80 oz. in. Cal. in 100 gr. and 4 oz. in. steps. ⅝" × 9¼" lg. . . . . **Price $32.50**

NEW UNGAR QUICK HEAT SOLID STATE SOLDER GUN

Designed for damage-free soldering of sensitive semiconductor devices by servicemen, lab technicians and electronics hobbyists. For replacement purposes, soldering tips are independent of the heating cartridge. Tip is electrically isolated from the heating element with a grounded 3-wire cord set. Heat cardridge locks into the gun barrel by means of a knurled nut; loosening the nut allows rotation of the entire cartridge to orient the threaded-on tips to any desired position. All basic parts are separately replaceable. Unit has a power indicator lamp. A HI-LO dual-heat, selector switch allows a choice of 500°F or 900°F tip temperature range. Complete unit comes with heat cartridge, interchangeable tellurium copper soldering tip, and 3-wire cord with NEMA plug. Weight, 5 oz. less line cord.

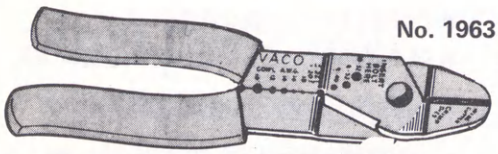


WEIGHS ONLY 5 OZ.!

*Has .250" diameter.

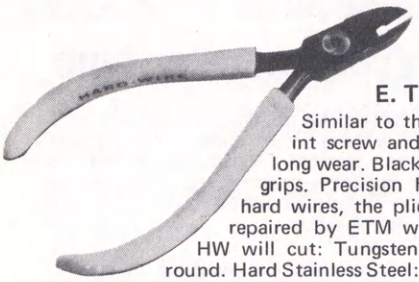
Ungar No.	Description	Net Each, Lots of 1-3	4-11	12 Up
6760	Complete solder gun	$10.95	$9.95	$8.95
6751	Heat cartridge	5.49	4.89	4.39
6755*	Long chisel tip, .535" length	.43	.39	.37
6753*	Short chisel tip, .410" length	.43	.39	.37
6754*	Pyramid tip, .410" length	.43	.39	.37

PLIECEPS & TESTPROBES



No. 1963 CRIMPER AND BOLT SLICER

Crimper is designed for crimping both insulated and non-insulated terminals. Has end-positioned wire cutter, strips wire and slices six sizes of bolts (10-32, 10-24, 8-32, 6-32, 5-40 and 4-40) **$5.95**



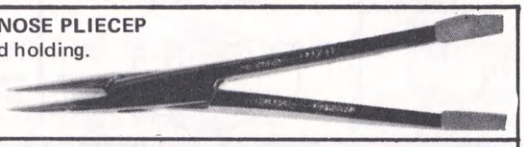
HARD WIRE CUTTER E. T. M. MODEL 1000 HW

Similar to the Model 1000 precision joint screw and tool steel inserted tip for long wear. Black oxide finish white vinylite grips. Precision hand sharpened to cut all hard wires, the plier can be re-sharpened and repaired by ETM when required. Model 1000 HW will cut: Tungsten Wire: Up to .012 x .025 round. Hard Stainless Steel: Up to .025 round. **$21.50**

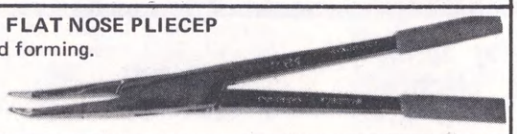
MICRO MINATURE PLIERS

Featuring micro minature plier points. Ideal for ultra miniature work and clean rooms, only 3/16" x 1/8" at hinge pin. All stainless steel, smooth jaws, plastic coated handles. Plieceps have grips for surgeon-like control. "Slendline" pliers have comfort handles in place of finger grips.

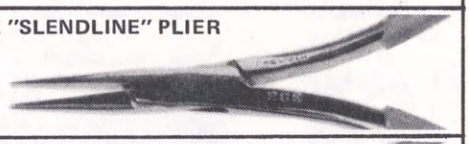
F278 CHAIN NOSE PLIECEP
For pulling and holding.
Length 4¾".
$5.95



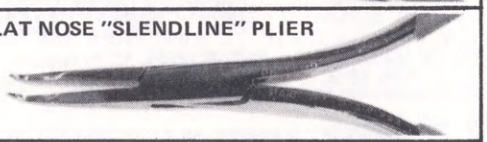
F281 OFFSET FLAT NOSE PLIECEP
For holding and forming.
Length 4¾".
$5.95



F283 CHAIN NOSE "SLENDLINE" PLIER
Length 5".
$5.95

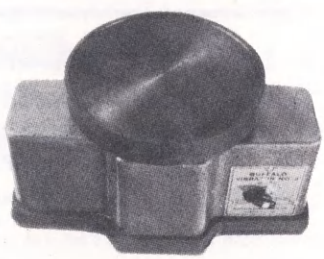


F286 OFFSET FLAT NOSE "SLENDLINE" PLIER
Length 5".
$5.95



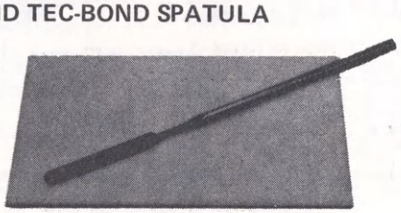
#223 VIBRATOR

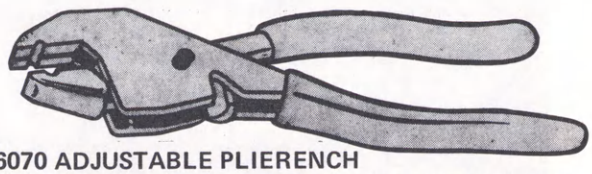
Excellent for degassing epoxies, etc. 10¾" wide, 6" height. The platform is 6" in diameter covered with molded rubber and 5½' of cord with push plug attachment is supplied. The body is enameled green and is fitted with a 3-speed switch. For 110-120 V., A.C. only **$65.00**



No. 24TC TEFLON SLAB AND TEC-BOND SPATULA

Teflon slab is acid, solvent and base resistant. Non-toxic. Wipes clean easily. 6" x 3" x 1/8". Stainless steel spatula with Kynar coated tip. Wipes clean easily wet or dry.
Both for **$9.95**





No. 86070 ADJUSTABLE PLIERENCH

Grips any surface, round, square or hex, with power and ease. Smooth jaws won't mar surface. 10-1 gear ratio provides up to a ton of gripping power. No other tool like it for power. Interchangeable jaws multiply its usefulness. 8½" long **$7.95**

No. 86072
Standard Jaw
$1.75

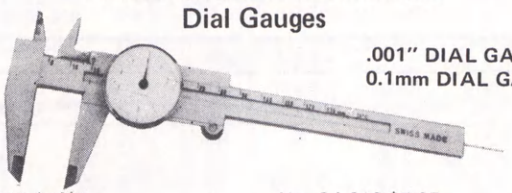
No. 86073
Large Jaw
$2.00

No. 86074
Giant/Internal
External Jaw
$1.75

No. 86071 KIT Plierench with 3 jaws in pouch **$12.50**

HI-IMPACT PLASTIC Swiss Made Dial Gauges

.001" DIAL GAUGE
0.1mm DIAL GAUGE



No. 24-612 **$7.95**

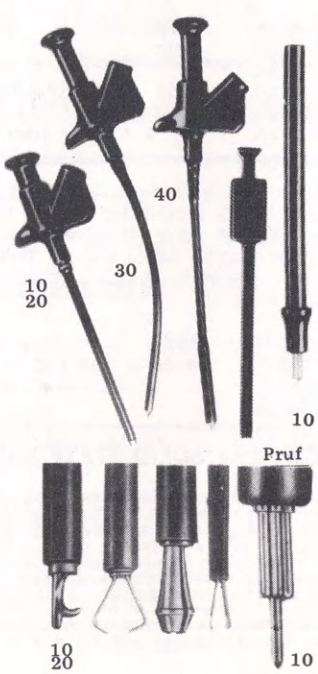
Capacity: 5"
Scales on Dial: .001"
1 revolution of the dial=1/10"
Scales on Gauge: 1/10";1/64"
Jaws 1 5/8"

No. 24-613 **$7.95**

Capacity: 133mm (5 1/4")
Scales on Dial: 0.1mm
1 revolution of the dial = 10mm
Jaws: 1 5/8"

Make outside, inside, step and depth measurements instantly! Gauges are equipped with thumb-rollers to make it easy to slide back and forth. . .while parallex-free anti-glare scales make it easy to read graduations. Large 1½" diam. dial takes readings to the fraction of the inch. Gauges are also non-magnetic.

ECONOMICAL · UNBREAKABLE · PORTABLE



CLEVER KLEPS

Test probes designed by your needs. Push to seize, push to release (all Kleps spring loaded). Specify black or red.

Kleps 10. Boathook type clamp grips wires, lugs, terminals. Accepts banana plug or bare wire lead. 4¾" long. **$1.19**

Kleps 20. Same, but 7" long. . **$1.39**

Kleps 30. Flexible forked tongue gripper. Accepts banana plug or bare lead. 6" long **$1.47**

Kleps 40. Completely flexible. 3-segment automatic collet firmly grips wire ends, PC-board terminals, connector pins. Accepts banana plug or plain wire. 6¼" long **$2.39**

Kleps 1. Economy Kleps for light line work (not lab quality). Meshing claws. 4½" long . . . . . **$.99**

Pruf 10. Versatile test prod. Solder connection. Molded phenolic. Doubles as scribing tool. "Bunch" pin fits banana jack. Phone tips. 5½" long. . . . . **$.79**

ALL PRICES SUBJECT TO CHANGE F.O.B. PHILADELPHIA

MICRO SOLDERING IRONS

QUANTITY DISCOUNTS (WELLER): 1 to 5 Net | 5 to 14 10% | 15 to 49 20% | 50 + 20%

WELLER CONTROLLED OUTPUT MINIATURE SOLDERING STATION

Controlled output soldering tools. Automatically controls output and temperature independent of line voltage. Power unit has on/off switch, red indicator light, receptacle for tip cleaning sponge, and convenient non-sinking tool stand. 3-wire cord. 20V. 50/60Hz.

MODEL W-MCP

- For micro soldering.
- Fixed temperatures.
- Non-burnable silicone rubber cord.
- Low voltage isolation transformer.
- Electrostatic shielding.
- Fast recovery.
- Superthin, 1.35 oz. pencil.
- Long life double clad tip.
- Furnished with 1/8" chisel tip. 20W.

MODEL W-TCP-L

- Temperatures of 500°F., 600°F., 700°F., 800°F.
- Non-burnable silicone rubber cord.
- Minimized tip freezing.
- Fast recovery.
- Cool handle.
- 1 2/3 oz. pencil iron.
- Long life double clad tips.
- Furnished with 3/16" 700°F. (PTD-7) screwdriver tip. 60W.

W-MCP
$33.10

Specify
W-MCP-**0** with a 650°F. control element,
W-MCP-**1** with a 550°F. control element or
W-MCP-**2** with a 750°F. control element.

W-TCP-L
$77.70

REPLACEMENT TIPS FOR MODEL W-TCPL

*Specify heat range: 500°F., 600°F., 700°F. or 800°F.

No.	TIP SIZE	DESCRIPTION	PRICE
*PTA	1/16"	Screwdriver	$.95
*PTAA	1/16"	Spade	.95
*PTB	3/32"	Screwdriver	.95
*PTBB	3/32"	Spade	.95
*PTC	1/8"	Screwdriver	.95
*PTCC	1/8"	Spade	.95
*PTD	3/16"	Screwdriver	.95
*PTDD	3/16"	Spade	.95
*PTH	1/32"	Screwdriver	.95
*PTP	1/32"	Conical	.95
*PTF	1/32"	Conical Flat	.95
*PTE	15/64"	Screwdriver	.95
*PTK	3/64"	Long Screwdriver	.95
*PTL	5/64"	Long Sorewdriver	.95
*PTM	1/8"	Long Screwdriver	.95

REPLACEMENT TIPS FOR MODEL W-MCP

MP2C	2/64"	(1/32") chisel tip	$.95
MP3C	3/64"	chisel tip	.95
MP5C	5/64"	chisel tip	.95
MP8C	8/64"	(1/8") chisel tip	.95

MODELS W60 and W100 Inexpensive and portable. Operates on line voltage. Automatic control of output and temperature.

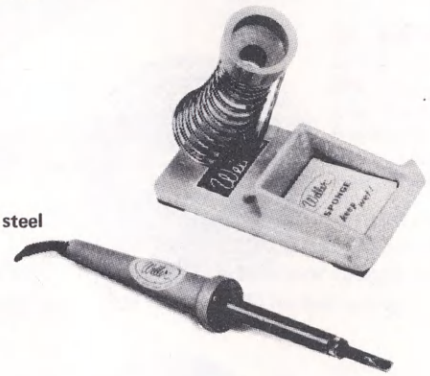
Model W60 Controlled output soldering tool, with 1/4", 700°F. screwdriver (#CT5E7) tip. 60W. 120V. 50/60Hz. 2-wire cord. **$11.60**

Model W100 Controlled output soldering tool, with 3/8", 700°F. screwdriver (#CT6F7) tip. 100W. 120V. 50/60Hz. 2-wire cord. **$14.55**

SOLDERING TOOL STANDS . . . stainless steel construction, will not sink off heat.

Model PH60 Soldering tool stand, with base and sponge. For W60 and irons with barrel diameters up to 15/32". **$4.90**

Model PH100 Soldering tool stand, with sponge. For W100 irons with barrel diameters up to 19/32". **$5.90**



REPLACEMENT TIPS FOR MODEL W60

*Specify heat range: 500°F., 600°F., 700°F. or 800°F.

No.	TIP SIZE	DESCRIPTION	REACH	PRICE
*CT5A	1/16"	Screwdriver	1-5/32"	$1.05
*CT5B	3/32"	Screwdriver	1-5/32"	1.05
*CT5C	1/8"	Screwdriver	1-5/32"	1.05
*CT5D	3/16"	Screwdriver	1-5/32"	1.05
*CT5E	1/4"	Screwdriver	1-5/32"	1.05

REPLACEMENT TIPS FOR MODEL W100

†Specify heat range: 600°F., 700°F. or 800°F.

†6C1N	1/8"	Screwdriver	1-15/32"	$1.65
†6C2N	1/8"	Pyramid	1-15/32"	1.65
†6D1N	3/16"	Screwdriver	1-15/32"	1.65
†6D2N	3/16"	Pyramid	1-15/32"	1.65
†6E1N	1/4"	Screwdriver	1-15/32"	1.65
†6E2N	1/4"	Pyramid	1-15/32"	1.65
†6F1N	3/8"	Screwdriver	1-15/32"	1.65

IDEAL VOLTAGE TESTER

PRODS: Spring loaded "safety shields" guard prod tips. Quick change, plug-in prod and lead assembly replacement. No slip safety grips. 30" oil resistant polychloroprene leads. Built-in strain and bend reliefs.

CASE: Pocket sized case is molded of high impact plastic in sure grip shape. Won't break if dropped. Ultrasonically welded case is sealed from dust, dirt and moisture. Built-in prod storage wells. Dual prod mounts for testing.

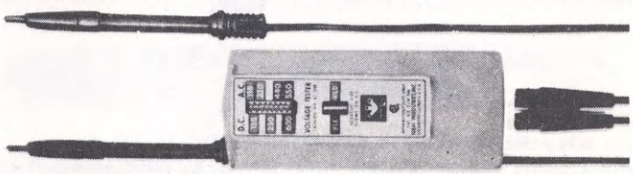
GENERAL: Two separate voltage indicators for double protection. One solenoid indicator with easy to read calibrated scale; one neon test lamp. Independent circuitry provides a built-in back up safety system.

VERSATILITY: Checks for 110 to 550V AC; 110 to 600V DC; to 60 Hz frequency; identifies AC or DC; checks circuit continuity; determines DC polarity; finds blown fuses, grounding, leakage.

SPECIAL VOLTAGE TESTER: Has all above features, plus special current limiting resistors in each prod. Resistors act as fuses in case of accidental shorts or breakdowns and limit current in leads to prevent dangerous arcing. Lexan case.

SIZE: Case length 5¾". Prods 4¾" long with 9/16" tips. Weight 13 oz.

61-065 Votage Tester, w/ 2 prods . . . . . **$ 8.25**
61-066 Voltage Tester, w/ 1 bord, 1 insulated clip **9.75**
61-067 Special Voltage Tester, w/ 2 prods **9.25**
61-008 Multi-Frequency Voltage Tester **17.50**
61-009 Vinyl Plastic Carrying Case **1.45**



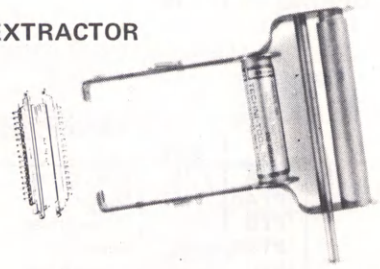
REPLACEMENT PLUG-IN PROD & LEAD ASSEMBLIES

61-070 Two test prods with lead assembly for 61-065 . **$2.95**
61-071 One test prod, one insulated clip with lead assembly for 61-066 . . . . . **4.20**
61-072 Two test prods with resistors and lead assembly for 61-067 . . . . . **4.95**

PRODUCTION AIDES

No. 4925 CONNECTOR EXTRACTOR

NEW



This handy device will eliminate all the struggle in disengaging even the toughest connector. A slight pressure of the fingers easily extracts a connector exerting even pulling pressure. Will not mar and can't bend pins of connector. It features a stainless steel, corrosion free anodized handle giving insulation.

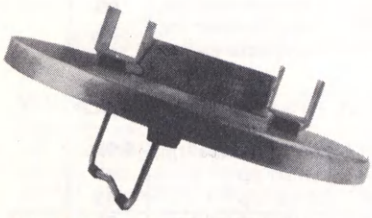
1 - 3 **$24.95** 4 - 9 **$23.50** 10 + **$21.50**

STATUS SEEKER

Indicates logic level 1 and logic level 0
Detects open circuits
Detects random noise pulses and level transitions
Generates logic level transitions
Generates 10 KHZ and 2 PPS logic compatible pulses

Designed for field service of computers, industrial control systems and remote terminals. Replaces scopes, pulse generators and other complex test instruments. Test results shown as signal lights. Requires no adjustment. 'Yes', 'No', answers simplify and speed training and reduce total test time. Has been extensively field tested.

$85.00

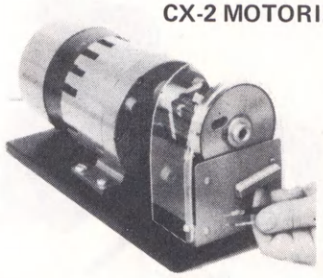


MODEL MH MAGNETIC CURCUIT BOARD HOLDER

A series of moveable magnetic blocks is mounted on a 10" diameter rotatable disc. Slots in the blocks hold circuit boards horizontally, vertically, or at an intermediate angle. The base can be set horizontally or at a 30° angle and moved in circular position without need for locking devices. Wide range of adjustment without use of knobs, locks, or adjusting devices. Disc is of heavily plated 18-gage steel and upper parts of magnetic blocks are fabricated of gold anodized aluminum.

MH-10 10" steel disc on tilting base . . . . . **$14.00 ea.**
MH-1A Magnetic Block 1¼" long . . . . . **$4.00 ea.**
MH-2A Magnetic Block 2½" long . . . . . **$6.00 ea.**
MH-5A Magnetic Block 5" long . . . . . **$9.00 ea.**

CX-2 MOTORIZED COAXIAL CABLE STRIPPER



- Prepares cable in a single operation
- Especially suited for miniature cables
- Also strips conventional hookup wire
- Fast setup and operation

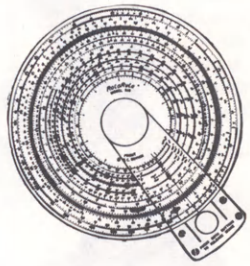
Designed for small as well as large production runs. Engages three cutters that cut the insulation and shielding of cable with a 3-step strip for the appropriate connector. Requires only 5 to 10 seconds. Has three adjustable cutting members with variable spacers to give proper stripping dimensions for all commonly used connectors. The entire unit is fabricated of anodized aluminum with easily replaceable hardened steel cutting blades. Includes 60 RPM geared motor, rotating stripping head, three cutter assemblies with blades, cutter spacers, and a set of eight cable holders in the following diameters: .080", .115", .165", .210", .265", .315" and .435".

Model CX-2 . . . . . $249.50

Replacement Cutter Blades $4.00/dozen

HEAT SHIELD Protects while soldering

It is no longer necessary to set up clumsy protective methods before soldering. It prevents oxidation on the most delicate finish metal work. It's odorless and non-toxic. Good for dozens of applications. Washes off with water **$5.95**



ROTA-RULE CIRCULAR SLIDE RULE

Precisely engraved and permanently molded scales made of light durable plastic 5" diameter. Brake holds runner when buttons are released. Slide friction and concentricity maintained by adjustable metal shoes in flush joint. Leather case included.

510-S-ST scales in decimals. **$32.50**
560-S-ST-T scales in minutes. **$32.50**

ENGLISH METRIC INFO-DISC

Convert between inches and millimeters quickly and easily by thousandths from .000 to 12.000. Convert degrees from absolute zero to 6300°F. to the nearest degree. Has C & D Slide Rule Scales. Conversion factors tables for lengths, area, volume, weight, pressure and power.

$4.50

No. 808 FIBER-FILLED PLASTIC TWEEZERS

Has a gentle positive grip for die attaching, handling semiconductors and chips. It's specially designed for maximum visibility (9/64" when closed). Overall measurements are 4 3/8" long by 7/16" at body, tapering down to fine angled points, flat on the inside, thus assuring positive holding grip. Tips will not open when extra pressure is applied.

1 - 10 — $1.20 ea. **11 - 99 — $1.10 ea.**
100 - 499 — $.95 ea. **500 & up — $.80 ea.**

No. 609 ACID RESISTANT PLASTIC TWEEZERS

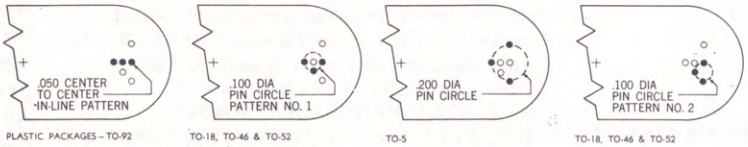
For handling semi-conductors without damage. Tips will not open when extra pressure is applied. Resists virtually all commercial solvents: i.e. Nitric, Aqua-Regia, non-magnetic and easy to clean. 4½" long by 7/16" at body, tapering down to .008" thick by 1/8" wide at tweezer tips. Wt. 1/4 oz.

1 - 10 — $1.25 ea. **11 - 99 — $1.10 ea.**
100 - 499 — $.95 ea. **500 & up — $.80 ea.**

SPECIAL PURPOSE PLIERS

See pages 3-22 in catalog #16 for other pliers

No. 2020 $35.00


.050 CENTER TO CENTER IN-LINE PATTERN
PLASTIC PACKAGES – TO-92
.100 DIA PIN CIRCLE PATTERN NO. 1
TO-18, TO-46 & TO-52
.200 DIA PIN CIRCLE
TO-5
.100 DIA PIN CIRCLE PATTERN NO. 2
TO-18, TO-46 & TO-52

No. 2024 $40.00

ETM SHEAR CUTTERS

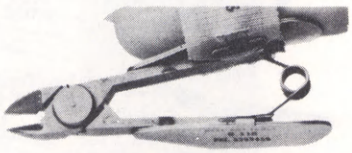
ETM shear cutters cut absolutely flat and burr free ends on wires, ribbons, tubing and transistor leads. Eliminates distortion by providing full peripheral support and cuts without any linear pull.

The No. 2020 Shear Cut has six wire cutting through-holes: .073", .064", .052", .040", .032", .025" for cutting wire, pins or tubing; and one slot for ribbon cutting which measures .020" x .100".

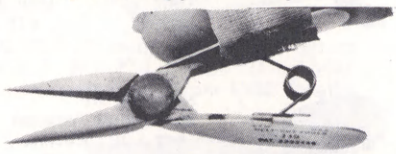
The No. 2024 Shear Cut trims semi-conductor leads to the proper length. Will cut all leads to the same length in one cut. Tool has a six hole lead pattern. It cuts all the leads on any 3 lead package if the leads are on a .100" or .200" diameter pin circle or a .050" to .100" center to center in-line pattern and are not more than .025" in diameter. It also has a single .035" aperture for the larger leads on diodes, resistors and capacitors.

HEAVY DUTY DELI-CUT TOOLS

For use with insulated nickel plated copper wire up to .030" diameter (26 gage).



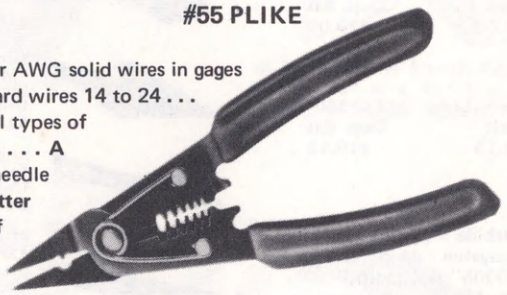
No. 118 Cutting edge near pivot point and longer handles increase leverage **$18.50**



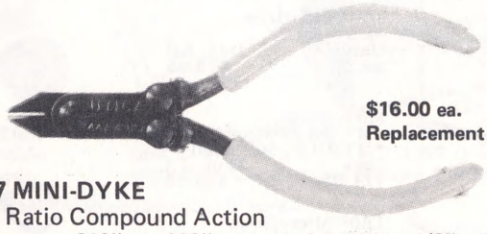
No. 119 Sturdy, sharply pointed, bending and positioning tool **$12.95**

No. 121 Heavy duty miniature flat nose bending tool. **$12.95**

#55 PLIKE



It's a Stripper — For AWG solid wires in gages 12 to 22 and standard wires 14 to 24 . . . **A Crimper** — For all types of solderless terminals . . . **A Plier** — A serrated needle nose plier . . . **A Cutter** Handles a variety of wires . . . **$2.75 ea.**



$16.00 ea.
Replacement Jaws $7.50

No. 447 MINI-DYKE

11-to-1 Ratio Compound Action

Will snap cut .010" x .020" nickel wire within 1/8" of jaw tips. 5-lb. hand pressure becomes 55-lb. cutting pressure on the jaws. Replaceable jaws are full flush for square cuts. Tongue and groove joint delivers smooth action with no loosening. Compact size is especially suited to close quarters and miniaturized units.

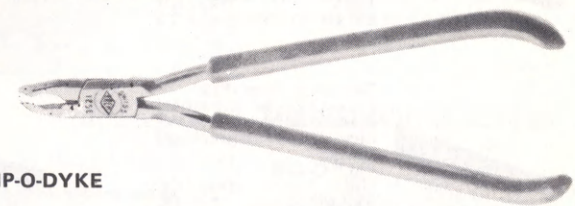
E-ZEE GRIP CUTTERS AND PLIERS

Newly designed handles to reduce operator fatigue and increase production . . .

Add $.25 for leaf springs

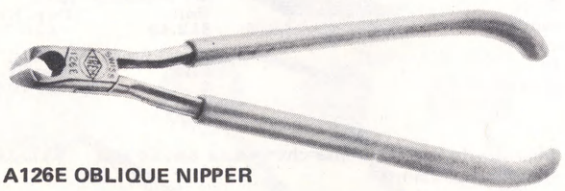
A124E FLAT FACE DYKE

Chrome Vanadium flush cut miniature head to cut .010 x .020 nickel ribbon, .020 nickel wire, .020 kovar wire and .040 copper component leads. 5¾". **$13.95**



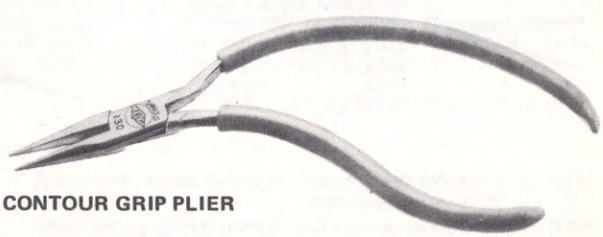
A125E TIP-O-DYKE

Relieved throat. Chrome Vanadium nipper used to cut .010 x .030 nickel ribbon, .020 nickel wire, .020 kovar and .040 copper component leads. 5 5/8". **$16.50**



A126E OBLIQUE NIPPER

Relieved throat. Chrome Vanadium flush cut miniature head cuts .020 x .030 nickel ribbon, .020 nickel wire, .020 kovar wire and .040 copper component leads. 6". **$14.45**

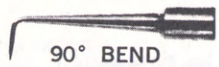


A130 CONTOUR GRIP PLIER

For use on vertical working surfaces. Pistol-type grip fits comfortably into the palm of the hand. Jaws smooth with radiused edges. Available with fine serrations. 6" **$11.95**

CIRCON MICROTOOLS

STRAIGHT



90° BEND

30° BEND

THREE TIP STYLES

All tips may be ordered in any of the above three styles. The part numbers shown with the tip photographs indicate those styles which are normally stocked.

MICRO-MINIATURE SIZE

CIRCON MicroTools are the smallest available precision tools. The shaft immediately preceding the tips has a nominal diameter of 0.030". Other sizes available upon request. All tips are shown approx. four times actual size.

MT-2 INTERCHANGEABLE HANDLE

CIRCON's Interchangeable MicroTool Handle was designed specifically for long duration precision work. This delicately balanced instrument is machined from aluminum and anodized. Available in black, red, blue and gold.

WIDE SELECTION

All tip configurations are available from stock. Low volume custom orders accepted.

STAINLESS STEEL TIPS

All tips are stainless steel unless specified otherwise.

INTERCHANGEABLE TIPS

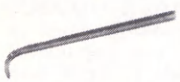
Each of the tips has a threaded base and may be used interchangeably on any handle.

To order a Duplicate Kit of any tip configuration, simply add a "K" before the tip part number. A Duplicate Kit is one handle and two tips of the same configuration packaged in a foam lined instrument case.

Ultra MicroNeedle
High Strength tungsten alloy - durable 0.0002" radius tip.
MT C-100 Straight
MT F-100 90° Bend
MT J-100 30° Bend
Unit $11.80 Dup. Kit $24.50

Sharp MicroNeedle
*MT C-110 Straight
MT F-110 90° Bend
MT J-100 30° Bend
Unit $6.70 Dup. Kit $15.50

Blunt MicroNeedle
*MT C-111 Straight
MT F-111 90° Bend
MT J-111 30° Bend
Unit $5.95 Dup. Kit $14.00



90° MicroHook
*MT C-115
Unit $8.25 Dup. Kit $18.25

MicroFork
MT C-126 Straight
*MT J-126 30° Bend
Unit $11.05 Dup. Kit $23.25

180° MicroHook
*MT C-120
MT J-120
Unit $9.50 Dup. Kit $20.50

MicroReamer
MT C-430 0.015-0.020" diam.
MT C-431 0.020-0.025" diam.
MT C-432 0.025-0.030" diam.
Unit $7.40 Dup. Kit $16.75

Diamond MicroFile
Finest grade industrial diamonds bonded to conical probe for precision filing.
*MT C-420
Unit $12.60 Dup. Kit $27.00

Guarded MicroHook
Thread wires through congested areas - guard prevents snagging upon withdrawal.
MT C-150 1" long
MT C-151 4" long
Unit $15.25 Dup. Kit $31.25

Corner Micro Manipulator
*MT J-380 30° Bend
Unit $9.10 Dup. Kit $19.75

MicroMirror
*MT J-400 Forward
MT J-401 Reverse
Unit $9.85 Dup. Kit $21.00

MicroBurnisher
*MT C-410
Unit $9.30 Dup. Kit $20.00

MicroLoop MT C-260
Unit $9.15 Dup. Kit $19.75

Carbide MicroScribe
Tungsten carbide — 0.0005" radius tip — suitable for probing or scribing.
MT C-440
Unit $9.75 Dup. Kit $21.00

Diamond MicroScribe
Top grade diamond mounted on a steel shaft—microscopically sharp point—90° included angle.
*MT C-450
Unit $13.50 Dup. Kit $28.50

Microlet Manipulator
Designed for Handling CIRCON minature eyelets.
Send for Bulletin 705

MicroScale
Measurement without microscope calibration.
MT C-170 3mm long— 50 micro div.
Unit $19.75 Dup. Kit $41.50
MT C-180 0.10" long— 0.005" div.
$21.60 $44.25
MT C-181 0.25" long— 0.005" div.
$25.40 $51.75
MT C-182 0.10" long— 0.002" div.
$25.80 $52.50

Ultra MicroKnife
*MT C-185 0.040" edge
Unit $13.95 Dup. Kit $29.50

MicroKnife
*MT C-186 0.100" edge
Unit $11.30 Dup. Kit $23.75

Ultra MicroLance
*MT C-195 0.040" double edge
Unit $17.70 Dup. Kit $37.00

MicroLance
*MT C-196 0.100" double edge
Unit $14.85 Dup. Kit $30.25

Sharp MicroChisel
*MT C-200 0.030" edge
Unit $14.10 Dup. Kit $28.75

Sharp MicroSpade
*MT C-215 0.20" double edge
Unit $15.50 Dup. Kit $32.25

MicroGraver *MT C-216
Unit $17.30 Dup. Kit $35.50

MicroSaw *MT C-220
Unit $7.85 Dup. Kit $17.50

MicroSpoon
MT C-240 Straight
*MT J-240 30° Bend
Unit $13.45 Dup. Kit $28.50

Stiff MicroSpatula
MT C-250 Straight
*MT J-250 30° Bend
Unit $9.30 Dup. Kit $20.00

Flexible MicroSpatula
MT C-255 Straight
MT J-245 30° Bend
Unit $12.45 Dup. Kit $25.75

Micro Brush *MT C-270
Unit $7.45 Dup. Kit $16.75

MTK-14	MicroNeedle Set - one interchangeable handle and 8 micro-tips assorted.	**$69.00**
MTK-12	MicroManipulator Set - one interchangeable handle and 8 micro-tips assorted.	**75.00**
MTK-11	Project Set - one interchangeable handle and 8 micro-tips assorted.	**97.00**
MTK-13	MicroKnife Set - one interchangeable handle and 8 micro-tips assorted.	**$115.00**
MTK-3	Technician's Set - three interchangeable handles and 23 micro-tips assorted.	**273.00**
MTK-4	Laboratory Set - six interchangeable handles and 46 micro-tips assorted.	**550.00**

MAGNETIC & N.C. TAPE STORAGE CABINETS

See Page 96, Catalog #16 for other cabinets

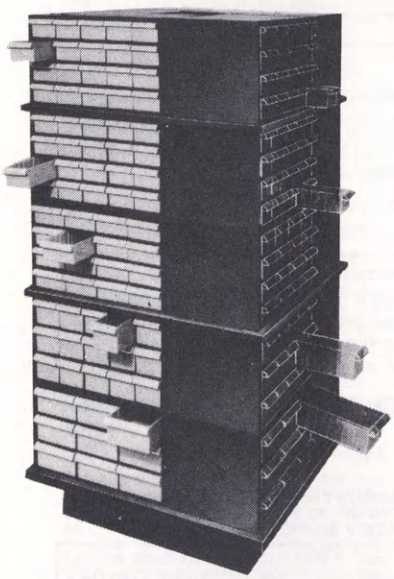
STORAGE/GO/ROUND CABINETS AND DRAWER BOXES

No. of Drawers	Drawer Size (Ins.) W x H x L
100	3 1/8 x 2 1/8 x 11
80	4 x 3 1/8 x 11
75	3 1/8 x 3 1/32 x 11
45	5¼ x 3 1/32 x 11
300	30,474 cu. in. Total

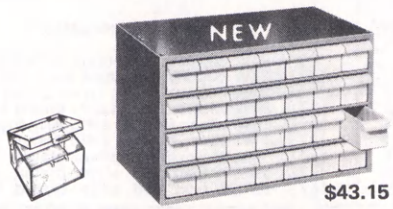
Unique storage control concept. It combines 20 A-M Cabinets holding 300 storage drawers (transparent or heavy duty gray polystyrene) conveniently and securely stacked on a heavy duty bearing mounted revolving base. It holds up to ½-ton of items with an additional ½-ton safety factor, storage space for thousands of items requiring less than 2 cubic yards of space. (30" W x 5' H x 30" D). Comes with two cabinet stabilizers.

98-555 (TRANSPARENT DRAWERS) $475.00
98-444 (HEAVY DUTY GRAY DRAWERS) 475.00

F.O.B. Factory

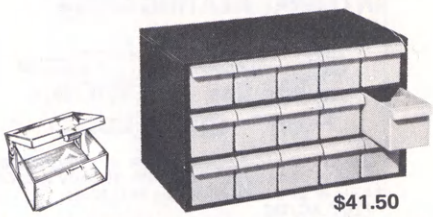


See page #96 in catalog #16 for other cabinets.



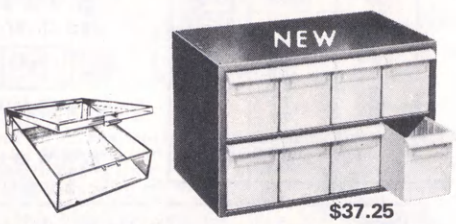
$43.15

98-700 CABINET with 252 drawer boxes. Each box is 2" W x 2" L x 1 1/8" D and holds wound or looped tapes of from 1'-60' lengths.



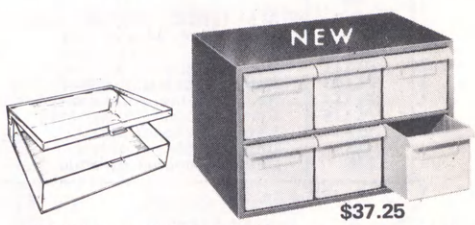
$41.50

98-710 CABINET with 135 drawer boxes. Each box is 2¾" W x 2 7/8" L x 1 1/8" D and holds wound or looped tapes of from 1'-75' lengths.



$37.25

98-720 CABINET with 72 drawer boxes. Each box is 3¾" W x 4½" L x 1 1/8" D and holds wound or looped tapes of from 1'-450' lengths.



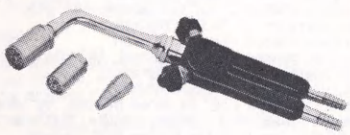
$37.25

98-730 CABINET with 54 drawer boxes. Each box is 4½" W x 5" L x 1 1/8" D and holds wound or looped tapes of from 1'-600' lengths.

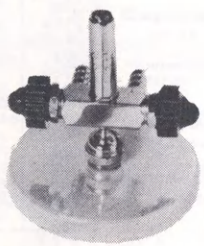
Write for information on replacement drawers.

#3A BLOWPIPE

For artificial or natural gas. Furnished with 3 tips, #N1 for small needle flame, #N2 for large brush flame and #OX3 tip for oxy-acetylene cutting. 7¾" long.
Complete **$27.95**



#5 BLOWPIPE



Operates on any fuel gas (except acetylene) including city, propane, natural, mixed, butane, etc. with compressed air. Excellent for custom glass fabrication and for use where high pin point flame is essential.

$18.00

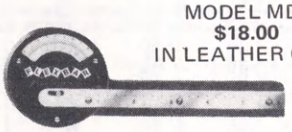
BUTANE LABORATORY BURNER

- Infinite control will produce soft controlled flame or hot blast.
- Hot, clean Bunsen flame.
- Finger-tip adjustment.
- Burns up to 7 hours.
- Inexpensive fuel replacement.

LABORATORY BURNER
No. 65 . . . . . $9.95
REFILL FUEL CONTAINER
No. 65-1 . . . . . $3.75

MICRO-DIVIDER SETTER

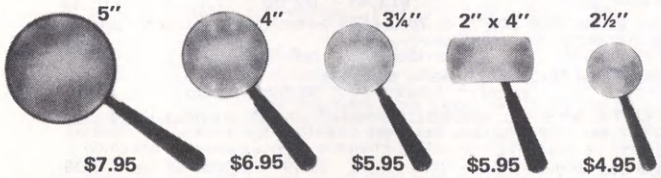
MODEL MDS
$18.00
IN LEATHER CASE



SET YOUR DIVIDERS TO ANY LENGTH UP TO 6" WITH AN ACCURACY OF .003" VERNIER READINGS IN .001"

Indispensable in drafting room and tool room. Place one leg of the divider in the movable center of the Micro-Divider. Place the other leg in the appropriate pin-point graduation of the 6" rule. Rotate the adjustment screw of the divider and read the vernier scale on the face of the Micro-Divider Setter. Vernier scale graduated in .001" Steel rule is scratch-resistant chrome plate. 7¾" long x 2¾" wide.

MAGNIFIERS

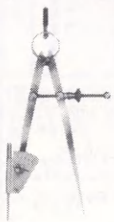


$7.95 **$6.95** **$5.95** **$5.95** **$4.95**

Ground and polished optical glass. Wide polished brass rim prevents scratching lens. Scientifically balanced with beautiful walnut reinforced handle . . . . . .

CENTER-PUNCH DIVIDER

SPECIAL
MODEL L-5
SEPARATELY **$8.50** EACH



Model L-5 shown at the left consists of a sturdy 5" spring divider, one leg of which has a special bracket holding a hardened-steel center punch. The Leytool center punch attachment is adjustable so that the punch itself will always be perpendicular to the surface being punched.

Model MDS; in leather case with #L-5. . . . . **$26.50**

Ungar®

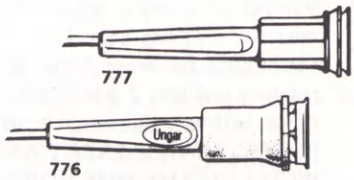
INTERCHANGEABLE HEATING UNITS, TIPS & TIPLETS

Heating Units Temperature Range: 825°-1200°F for Super Hi-Heat Series #4000 rated 47½-56½ W; 800°-900°F for Hi-Heat Series #1200 rated 37½-44 W; and 700°-850°F for Standard Series #500, rated 23½-27 W.

Note: "Standard Line" components are interchangeable with each other; but, may NOT be used with "Imperial® Line" items.

"STANDARD LINE" SOLDERING TOOLS

ALL PARTS THREAD TOGETHER WITH FINGERTIP EASE



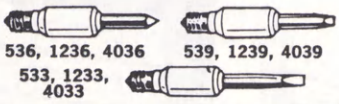
MODEL 777 "CLEAN ROOM" HANDLE

Features "Clean Room" grip for the electronic industry, plus handle is in pastel shade for less eye fatigue of the operator. Full contact spring socket; stainless steel heat deflector; new octagonal guard washer; plated socket terminals; new ceramic and glass insulator; thermo-stabilized phenolic body; polyvinyl insulated cord. Tips cannot wobble. For 120V AC/DC.

Ungar Model 777 Handle–Net each, 1-9 $2.02 10-49 $1.66 50 Up $1.51

Ungar Model 776 Handle–Same, but red with cork grip.
Net each, 1-9 ..... $2.02 10-49 ..... $1.66 50 Up $1.51

INTEGRAL HEATING UNITS AND TIPS



*23½W at 110V AC/DC; 27W at 120V AC/DC.
†37½W at 110V AC/DC. 44W at 120V AC/DC.
‡47½W at 110W AC/DC; 56½W at 120V AC/DC.

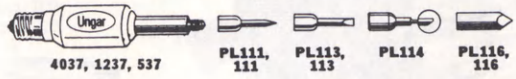
Ungar No.	Description	Net Each, Lots of 1-9	10-49	50 UP
533	*23½-27W copper, long taper chisel tip	$1.75	$1.44	$1.31
536	*23½-27W copper, pyramid tip	1.75	1.44	1.31
539	*23½-27W copper, short taper chisel tip	1.75	1.44	1.31
1233	†37½-44W copper, long taper chisel tip	2.53	2.08	1.90
1236	†37½-44W silver-plated, solid Armco iron pyramid tip	2.53	2.08	1.90
1239	†37½-44W silver-plated, solid Armco iron chisel tip	2.53	2.08	1.90
4033	‡47½-56½W iron clad, silver-plated, long chisel tip	3.67	3.01	2.75
4036	‡47½-56½W iron clad, silver-plated, pyramid tip	3.67	3.01	2.75
4039	‡47½-56½W iron clad, silver-plated, taper chisel tip	3.67	3.01	2.75

THREAD-ON HEATING UNITS AND TIPS

Ungar No.	Description	Net Each, Lots of 1-9	10-49	50 Up
4037	825°-1200°F, 56½-watt unit*	$3.67	$3.01	$2.75
1237	800°-900°F, 44-watt unit*	2.53	2.08	1.90
537	700°-850°F, 27-watt unit*	2.05	1.69	1.53
PL111	Iron clad pencil, ¾" long	.93	.77	.70
PL113	Iron clad chisel, ¾" long	.93	.77	.70
PL114	Iron clad stepped micro-spade	.93	.77	.70
PL116	Iron clad pyramid, 5/16" long	.93	.77	.70
111	Unplated copper pencil	.48	.40	.36
113	Unplated copper chisel	.48	.40	.36
116	Unplated copper pyramid, 5/16" long	.48	.40	.36

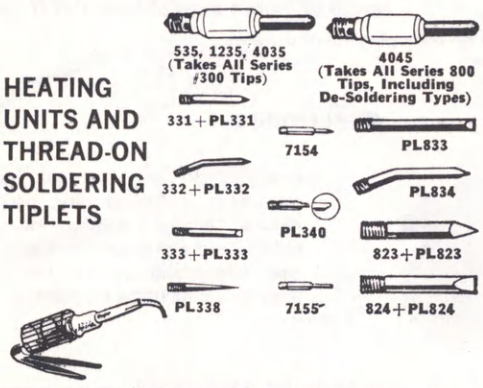
*At 110 volts.

Provide 100% increase in recovery rate; greater heat transfer. Stops tip seizure from oxidation or solder; passivated plating prevents barrel oxidation and surface flaking. Tips copper alloy, iron clad silver-plated or unplated.



*23½ W at 110 V AC/DC; 27 W at 120 V AC/DC. †37½ W at 110 V AC/DC; 44 W at 120 V AC/DC. ‡47½ W at 110 V AC/DC; 56½ W at 120 V AC/DC.

HEATING UNITS AND THREAD-ON SOLDERING TIPLETS

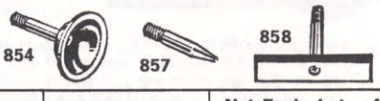


Ungar No.	Description	Net Each, Lots of 1-9	10-49	50 Up
535	*1/8" tap unit for 300 and 7100 Series Tiplets	$1.75	$1.44	$1.31
1235	†1/8" tap unit for 300 and 7100 Series Tiplets	2.53	2.08	1.90
4035	‡1/8" tap unit for 300 and 7100 Series Tiplets	3.67	3.01	2.75
7012	Precision point, unplated copper, 1/8" dia.	.72	.59	.54
7062	Precision point, iron clad, 1/8" dia.	1.82	1.08	.99
PL331	Iron clad, silver-plated 1" pencil, 1/8" dia.	.72	.59	.54
331	Plain copper version of PL331 Tiplets	.30	.25	.23
PL332	Iron clad, silver-plated 1" offset pencil, 1/8" dia.	.72	.59	.54
332	Plain copper version of PL332 Tiplets	.30	.25	.23
7154	Iron clad, silver-plated stepped pencil	.72	.59	.54
PL333	Iron clad, silver-plated 1" long chisel, 1/8" dia.	.72	.59	.54
333	Plain copper version of PL333 Tiplets	.30	.25	.23
7155	Iron clad, silver-plated stepped chisel	.72	.59	.54
PL338	Iron clad, silver-plated 1¾" tapered needle, ½" dia.	.72	.59	.54
PL340	Iron clad, silver-plated ¾" micro-needle, ¾" dia.	.72	.59	.54
4045	‡47½-56½ W 3/16" tap unit for Series 800 Tiplets	3.67	3.01	2.75
PL823	Iron clad, silver-plated 1" pyramid, 3/16" dia.	.82	.67	.61
823	Plain copper version of PL823 Tiplets	.35	.29	.26
PL824	Iron clad, silver-plated 1" chisel, 5/16" dia.	.82	.67	.61
824	Plain copper version of PL824 Tiplets	.35	.29	.26
PL833	Iron clad, silver-plated 1¾" chisel, 5/16" dia.	1.17	.96	.88
PL834	Iron clad, silver-plated 1¾" offset chisel, 3/16" dia.	1.17	.96	.88

SOLDERING IRON HOLDER. Protects operator from burns; prevents iron breakage. Use with Ungar 776 or 777 handle. Attaches easily to bench; angle adjustable.

Ungar No. 8000 Holder–Net each, 1-9 $2.30 10-19 $1.86 50 Up $1.73

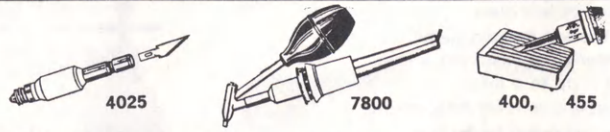
DE-SOLDERING TIPS & KITS



Ungar No.	Tip Type	Size, in. O.D. x L.	Net Each, Lots of 1-9	10-49	50 Up
857	Slotted	1" x 1/16"	.98	.81	.74
856	5/8" Cup	5/8"	.98	.81	.74
855	¾" Cup	¾"	.98	.81	.74
854	1" Cup	1"	.98	.81	.74
858	Bar	1½" x ⅜"	.98	.81	.74

Ungar No. 270 De-Soldering Kit–With five most popular tips (Nos. 854, 855, 856, 857 and 858), No. 776 handle and No. 4045 heating unit in metal case. Net each, 1-5 ... $9.28 6-11 ... $7.63 12 & Up ... $6.96

UNGAR SOLDER-OFF BULB. De-soldering bulb with TFE tip facilitates accurate printed circuit soldering and cleaning. May be used with "Imperial" and "Standard Line" soldering irons. (Not illustrated.)
Net each, 1-9 .... $1.48 10-49 ..... $1.22 50 & Up $1.10



MODEL 4025 HOT KNIFE. Cuts and seals synthetic fabrics, vinyl film, styrofoam and other plastics. Easly cuts coatings on PC boards. Blade temp., 500°F. Replaceable, tempered steel blade.

Ungar Model 4025 Hot Knife–Net ea., 1-9 $4.22 10-49 $3.47 50 up $3.16

HOT-VAC DESOLDERING, CLEANING TOOL. For printed circuit desoldering and cleaning; also for heat shrinkable tubing. Tip uses coating to prevent solder clogging the orifice. For use with Model 777 handle.

Ungar Model 7800 Hot-Vac Tool–Net each, 1-5 ..... $13.95
Net each, 6-11 ..... $11.47 12 Up $10.45

Ungar Model 7806 (.057") or **7813** (.069")–Replacement tips for above; hole dia. shown in parenthesis.
Net each, 1-9 ..... $.90 10-49 ..... $.69 50 Up 63c

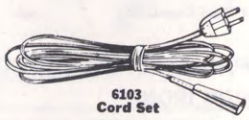
Ungar Model 7812 (.033")–Same as above.
Net, 1-9 ..... $1.29 10-49 ..... $1.04 50 Up ..... $.95

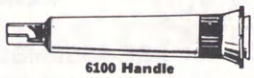
KLEEN-TIP SPONGE. Specially processed sponge provides the surest way to clean soldering tips. Removes oxidation, prevents contamination and insures soldering reliability. Phenolic tray. Fastens to bench.

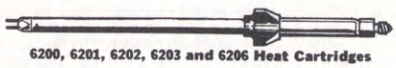
Ungar No. 400–Net each, 1-9 .. 1.32 10-49 .. $1.08 50 Up .. $.99

Ungar No. 455 Refill Sponge–Individually packaged.
Net each, 1-9 ..... $.53 10-49 ..... $.44 50 Up ..... $.40

Ungar® / Imperial® SOLDERING TOOLS


6103 Cord Set


6100 Handle


6200, 6201, 6202, 6203 and 6206 Heat Cartridges

Interchangeable cord sets, tips and heat cartridges ideal for critical micro-miniature components. Reliable, low wattage, high temperature performance. Perma-Cool handle has double cushion of air combined to 5 heat-transistion surfaces for continuous cooling. Components individually packaged on cards; assemble to suit your needs. **Not interchangeable with "Standard Line."**

PERMA-COOL COLORED HANDLES

In cool, pastel turquoise, proven to reduce operator fatigue. Virtually indestructable, handles are made of high strength plastic resin. Diecast heat sink built-in. Pencil type design for easy handling. U/L Listed. Size, 0.8" O.D. at grip; 4.7" lg. Weight, 1 oz.

Ungar No. 6100–Handle only. Net each, 1-9 ..... $1.87
10-99 ..... $1.51 100 Up $1.40

IMPERIAL COMPLETE SOLDERING IRONS

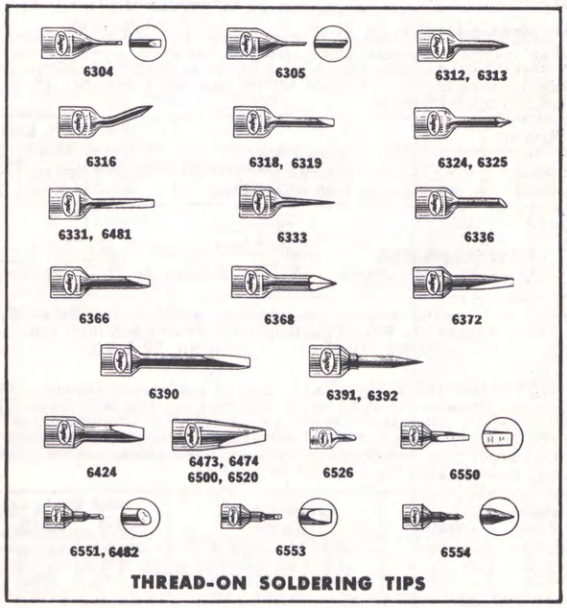
Ungar No. 6010–Includes one 6100 handle, one 6102 cord set, one 6200 heat cartridge and three assorted Mini-Tips.
Net each, 1-5 ..... $9.95 6-11 ..... $7.95 12 Up $7.50

Ungar No. 6601–Heavy-duty iron includes handle, cord set, 6207 (100 W) heat cartridge and 6520 tip.
Net each, 1-5 ..... $13.50 6-11 ..... $12.95 12 Up $10.15

INTERCHANGEABLE CORD SETS

Instantly adapts your iron to any 2 or 3 wire outlet. Molded female connector plugs onto the Perma-Cool handle without tools. Vinyl-covered cord, 18 gauge, 65 strands extra-flexible copper; terminals and connectors molded polyvinyl chloride. Center conductor (3-wire type) is insulated with green polyvinyl. Weight: 2½ oz., 2-wire; 4 oz., 3- wire.

Ungar No.	Description	Net Each, Lots of		
		1-9	10-99	100 Up
6102	Standard 2-wire cord set with plug	$2.70	$2.19	$2.03
6103	3-wire cord set with NEMA plug	3.97	3.22	2.98



THREAD-ON SOLDERING TIPS

INTERCHANGEABLE LONG-LIFE HEAT CARTRIDGES

Stainless steel, sealed cartridge with element at tip and threaded end for quick tip changes; keeps heat at tip where it belongs. Six ratings available: **6200:** 40 watts for 750-950°F; accepts all tip Nos. 6304 through 6482. Size, 7½" l. x .363" dia. (2½" l. from flange). Wt., 1.1 oz. **6201:** Same, but 30 watts for 650-850°F. **6202:** Same, but 25 watts for 600-800°F. **6203:** 60 watts for heat range, 850-1150°F. Accepts all iron clad gold-plated tips plus No. 6526 beryllium oxide tip, 750°-800°F; 7⅛" long; wt., 1.2 oz. **6206:** Miniature 15-watt for 614-743°F; use with tip Nos. 6550-6554 only. 6⅞" lg. x .312" dia. (2" lg. from flange) wt., 0.89 oz. **6207:** 100-watt cartridge; use only with tip No. 6520; replacement for unit in 6601 complete iron. Wattage rating at 115 volts. U/L Listed.

Ungar No.	Rated Watts	Net Each, Lots of			Ungar No.	Rated Watts	Net Each, Lots of		
		1-9	10-99	100 Up			1-9	10-99	100 Up
6200	40	$5.02	$4.07	$3.76	6203	60	$5.75	$4.66	$4.31
6201	30	5.02	4.07	3.76	6206	15	5.00	4.07	3.76
6202	25	5.02	4.07	3.76	6207	100	7.65	6.23	5.76

THREAD-ON SOLDERING TIPS

Completely interchangeable with the Imperial line (NOT interchangeable with Ungar "Standard Line"). Thread onto heat cartridge (either 25, 30, 40 or 60 watt models) with fingertip ease. Available in beryllium oxide (repels solder), copper alloy or long life, 24 kt. gold-plated iron clad types.

MINI-TIP® FOR 6200, 6201, 6202 OR 6203 HEAT CARTRIDGES

Ungar No.	Shape	Material	Size, In. O.D. x L.	Temp. (°F)*With Cartridge Rated			Net Each, Lots of		
				25 W	30 W	40 W	1-9	10-99	100 Up
6304	Micro-chisel	Iron clad	3/64 x ½	750	800	890	$1.30	$1.05	$ .98
6305	Micro-spade	Iron clad	3/64 x ½	750	800	890	1.30	1.05	.98
6312	Pencil	Copper	⅛ x ¾	750	800	910	.58	.47	.44
6313	Pencil	Iron clad	⅛ x ¾	690	750	860	1.30	1.05	.98
6316	Offset pencil	Iron clad	⅛ x ¾	690	750	860	1.30	1.05	.98
6318	Long taper chisel	Copper	⅛ x ¾	750	800	890	.58	.47	.44
6319	Long taper chisel	Iron clad	⅛ x ¾	690	750	860	1.30	1.05	.98
6324	Long taper pyramid	Copper	⅛ x ¾	750	800	890	.53	.47	.44
6325	Long taper pyramid	Iron clad	⅛ x ¾	690	750	860	1.30	1.05	.98
6331	Screwdriver	Iron clad	⅛ x ¾	690	750	860	1.30	1.05	.98
6333	Needle	Iron clad	⅛ x ¾	690	750	860	1.30	1.05	.98
6336	Spade	Iron clad	⅛ x ¾	690	750	860	1.30	1.05	.98
6366	Long taper chisel	Iron clad	3/16 x ¾	680	730	850	1.53	1.24	1.15
6368	Long taper pyramid	Copper	3/16 x ¾	...	...	...	.72	.58	.54
6372	Screwdriver	Iron clad	3/16 x ¾	680	730	850	1.53	1.24	1.15
6390	Screwdriver	Iron clad	3/16 x 1½	600	650	750	1.57	1.27	1.18
6391	Precision point	Copper#	.....	...	...	....	.93	.76	.70
6392	Precision point	Iron clad	.....	...	...	...	1.80	1.46	1.35
6424	Long taper chisel	Iron clad	¼ x ¾	680	730	850	1.57	1.27	1.18
6473	Long taper chisel	Copper	⅜ x ¾	...	...	...	.70	.58	.54
6474	Long taper chisel	Iron clad	⅜ x ¾	670	730	840	1.80	1.46	1.35
6481	Tapered screwdriver	Iron clad	¾ x 3/32	690	750	860	1.30	1.05	.98
6482	Micro-spade	Iron clad	3/64 x ½	700	770	860	1.30	1.05	.98
6526†	Chisel	Beryllium	.....	475	550	575	5.00	4.00	3.75
6520‡	Long taper chisel	Copper#	.....	...	...	...	1.57	1.27	1.18
6500‡	Long taper chisel	Iron clad	.....	...	...	...	3.07	2.49	2.30

MICRO-TIP® FOR 6206 15-WATT HEAT CARTRIDGE ONLY

6550	Tapered screwdriver	Iron clad	.040 x .40	614-743 at 15 W	$1.52	$1.23	$1.14
6551	Stepped spade	Iron clad	.050 x .40	614-743 at 15 W	1.52	1.23	1.14
6553	Stepped chisel	Iron clad	.050 x .40	614-743 at 15 W	1.52	1.23	1.14
6554	Stepped pencil	Iron clad	.050 x .40	614-743 at 15 W	1.52	1.23	1.14

*Slight variation in line voltage will give ±25°F deviation. †Micro-Tip with adapter and tip protector.
‡For 100-watt 6207 cartrdge or 6601 iron only. #Unplated.

DE-SOLDERING ATTACHMENT

Ungar No. 6825 De-soldering Tool–For printed circuit use. Tip coated to prevent clogging. Fits 25- to 60-watt cartridges.
Net each, 1-5 ..... $11.55
6-11 . $9.36 12 Up . 8.66

Ungar No. 7806 (.057") or **7813** (.069") **Replacement Tips**–
Net each, 1-9 ..... $.90
10-49 . . $.74 50 Up 69

Ungar No. 7812 (.033")–Same as above. Net ea. 1-9 . . . $1.29
10-49 . $1.04 50 Up . . .95

SAFETY-GUARD HOLDER

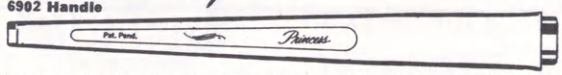
Ungar No. 6800–Designed especially for Imperial irons. Protects against hot tip burns or handle damage. Attaches to top or underside of bench. Black with gold cage guard.
Net each, 1-9 ..... $2.30
10-49 . $1.86 50 Up . . 1.73

ANTI-SEIZE

Special lubricant lengthens tip and heating unit life. For use with Princess, Imperial and "Standard Line" tools. Reduces thread seizure. Improves heat transfer.

Ungar No. 8001–½ oz. tube.
Net each, 1-9 ..... $.89
10-49 . . $.76 50 Up 67

Ungar. / Princess® SOLDERING TOOLS, ACCESSORIES



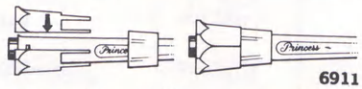
6902 Handle

Miniature soldering iron designed to meet requirements for precision micro-electronic circuitry and high density assembly. Offer thermo-efficiency and work capacity never before achieved in small feather-weight irons. Slim design, turquoise handle assures deft soldering. Choice of easy-to-assemble units thread together for versatility in tip shapes and temperature capabilities. Low initial investment, economical maintenance and inexpensive parts replacement.

PRINCESS HANDLES Slim, cool design is molded of heat-resistant nylon pastel turquoise color. Midget thread-in socket accepts any Princess heat capsule. Choice of 2-conductor and 3-conductor (NEMA) vinyl-covered cords. For 120V AC/DC operation. Weight: .05 oz., less cord; 3.0 oz., with cord.

Ungar No.	Cord Type	Net Each, Lots of 1-9	10-49	50 Up
6902	2-conductor with plug	$3.72	$3.23	$2.86
6903	3-conductor with NEMA plug	4.93	4.29	3.79

NEW PRINCESS "MINI" COOL-GRIP



6911

Reduces fingertip temperature as much as 25-30%. Fits all Princess handles. **Ungar No. 6911** Cool-Grip only, handle not included. Net ea., 1-9 ..... $1.05 10-49 ..... $.86 50 & Up ..... $.79

HEAT CAPSULES Threaded to accept the special thread-in Princess soldering nibs and mating to the Princess handles with finger-tip ease. Also accept "Standard Line" ⅛" tiplets if desired (will not accept Imperial tips). Choice of three wattages and temperature ranges to suit most production requirements. For 120V AC/DC operation. Size, 2¾" long; extends 1½" from handle. Wt., 0.2 oz.

Ungar No.	Watts	Temperature Range	Net Each, Lots of 1-9	10-49	50 Up
6910	10	550°F to 650°F	$4.55	$3.96	$3.50
6915	15	700°F to 800°F	4.55	3.96	3.50
6918	18	900°F to 1000°F	4.55	3.96	3.50

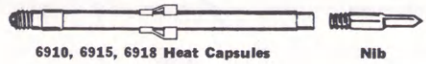
PRINCESS SOLDERING NIBS Choice of 24 Kt. gold-plated iron clad or cadmium copper tips in four standard shapes. Finger-tip ⅛" thread-in use on any Princess heat capsule listed above. Ungar's ⅛" Standard Line tiplets may also be used (see listing on another page). Wt., .03 oz.

Ungar No.	Shape	Material	Lgth., In.	Tip Stepped to:	Net Each, Lots of 1-9	10-49	50 Up
6950	Pencil	Cadmium copper	.61	.080" x .015"	$ .45	$ .39	$ .35
6951	Screwdriver	Cadmium copper	.68	.080" x .055"	.45	.39	.35
6952	Spade, 45°	Cadmium copper	.61	.080" dia.	.45	.39	.35
6953	Precis. point	Cadmium copper	.61	.095" x .005"	.83	.72	.64
6960	Pencil	Gold-pl. iron clad	.62	.090" x .015"	.78	.68	.60
6961	Screwdriver	Gold-pl. iron clad	.62	.090" x .060"	.78	.68	.60
6962	Spade, 45°	Gold-pl. iron clad	.62	.090" dia.	.78	.68	.60
6963	Precis. point	Gold-pl. iron clad	.61	.095" x .010"	1.52	1.32	1.17

PRINCESS MINIATURE SOLDER CUP

For tinning micro-miniature leads and components or de-soldering requirements. Adjustable, thermostatically controlled temperatures (400-750°F); corrosion proof, bronze melt cup; rugged diecast construction. Uses standard Ungar No. 4037 heating unit. Cup depth, ⅜"; dia. 1.0"; capacity, 1 oz. Power required, 120V AC/DC. Weight, 1¼ lbs.

Ungar No. 7000 Miniature Soldering Cup–With 3-wire cord and grounded NEMA plug.
Net each, 1-3 11.25 4-11 $9.65 12 Up $8.50


6910, 6915, 6918 Heat Capsules Nib

PRE-ASSEMBLED PRINCESS COMBINATIONS

MODEL 6975 SOLDERING IRON

All-in-one package provides a complete Princess soldering iron with three interchangeable copper nibs. Includes one 6902 handle with 2-conductor cord and plug, one 6910 Heat Capsule rated 10 watts, one 6950 pencil nib, one 6951 screwdriver nib and one 6952 spade nib.

Ungar No. 6975 Princess Assembly–Net each, 1-9 ..... $9.19
10-49 ..... $7.95 50 Up 7.05

NEW PRINCESS MODEL 6992 DE-SOLDERETTE

6992

Featherweight de-soldering tool for fast, safe removal of integrated circuits, chips and micro-miniature modules. Its 18-watt heat capsule delivers 600°F tip temperature. Also features Ungarized white coating inside and outside of collector body and stainless steel lined replaceable tip with .033" aperture. No sticking or clogging. Includes arm and bulb, check valve, two-wire handle.

Ungar No. 6992 Princess de-Solderette'–Net each, 1-9 ..... $17.75
10-49 ..... $15.42 50 Up $13.65

MODEL 6900 SOLDERING STATION

Fully assembled iron with three interchangeable copper nibs, plus Princess holder with cleaning sponge. Includes: 6902 handle with 2-conductor cord and plug, 6910 heat capsule rated 10 watts, 6950 pencil nib, 6951 screwdriver nib, 6952 spade nib, and 6990 soldering iron holder complete with cleaning sponge.

Ungar No. 6900 Soldering Station–Net each, 1-9 ..... $12.89
10-49 ..... $11.20 50 Up ..... $ 9.89

PRINCESS SOLDERING IRON HOLDER

Comes with specially-processed slit sponge for tip cleaning.

6990

Ungar Model 6990 Holder–Net each, 1-9 ..... $3.93
10-49 ..... $3.42 50 Up $3.03

Ungar No. 6991 Sponge Refill–Replaceable sponge for above holder.
Net each, 1-9 ..... $.60 10-49 ..... $.52 50 Up ..... $.46

DE-SOLDER TIPS

6940 6941 6944 6945 6947

Iron-clad, nickel-plated and pre-tinned tips may be used with Ungar "Standard" line heating units No. 535, 1235 and 4035 or Princess heat capsules (for lower or higher tip temperatures).

Ungar No.	Tip Temp. at 18 W	Description	Net Each, Lots of 1-9	10-49	50 Up
6940	680°F	Flat pack (Hook)	$2.50	$2.17	$1.93
6941	720°F	Flat pack (Bar)	2.37	2.06	1.85
6943	700°F	TO pkg. (cup) .6" dia.	2.37	2.06	1.85
6944	710°F	TO pkg. (cup) .5" dia.	2.37	2.06	1.85
6945	720°F	TO pkg. (cup) ⅜" dia.	2.37	2.06	1.85
6946	780°F	TO pkg. (cup) .28" dia.	2.37	2.06	1.85
6947	750°F	Slotted (lead and tab) straightener	1.98	1.72	1.53
			2.70	2.35	2.08

SOLDERING KITS FOR EVERY REQUIREMENT

Ungar No 7070 All-Purpose Soldering Kit. Complete 44 Watt soldering kit with Model 776 handle; No. 1237 heating unit; three copper tips (111; 113 and 116).
Net each, 1-5. $5.98 6-11. . $4.95 12 & Up. $4.49

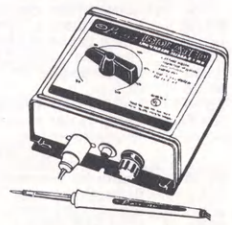
Ungar No. 7929 Soldering Kit with No. 7901 handle and heating unit; copper tip No. 113; No. 400 Kleen-Tip sponge and tray; No. 7951 wire stripper.
Net each, 1-9. $4.25 10-49. . $3.55 50 & up. $3.19

Ungar No. 7930 complete Hot Knife Kit. Includes No. 4025 Hot Knife blade and heating unit and No. 777 handle.
Net each, 1-9. $5.95 10-49. $5.10 50 & up. $4.49

Ungar No. 7075 Heavy Duty Soldering Kit. Complete 56½ Watt soldering kit with Model 777 handle. No. 4037 heating unit; three copper tips, (111, 113 and 116).
Net each, 1-9. $7.09 10-49. $5.75 50 & Up. $5.29

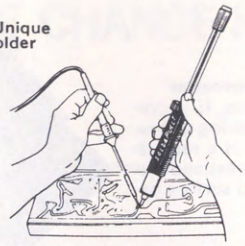
PRINCESS LOW VOLTAGE SOLDERING SYSTEM

Complete soldering system includes transformer, handle, heat capsule, plus three tips. **Transformer:** Completely isolated 12-volt system provides maximum thermal recovery for production soldering. Case is grounded with 3-wire cord and NEMA plug. U/L Listed. Input, 120V AC, 60 Hz. Output, 1.3 amps, 10V AC, 60 Hz. Bayonet 3-amp fuse and pilot light. **Soldering Pencil:** Heat resistant nylon handle with flexible vinyl cord and 4-pin connector. Heat capsule provides tip temperatures 400°F to 900°F; rated 18 watts at 12V AC. **Tips:** "Standard Line" Ungar ⅛" tiplets and Princess soldering nibs may be used; cadmium copper or iron clad.



Ungar No.	Description	Net Each, Lots of 1-3	4-11	12 Up
6970	Complete station with transformer, handle, heat capsule and 6961, 6950 and 6952 soldering nibs	$35.00	$29.95	$26.95
6971	Replacement, low voltage heat capsule only (12V, 18W)	5.85	5.09	4.49
6972	Low voltage transformer	22.50	19.50	17.29
6973	Replacement handle only	5.85	5.07	4.49

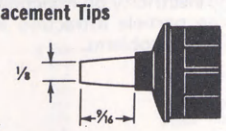
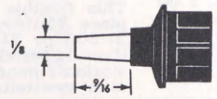
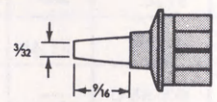
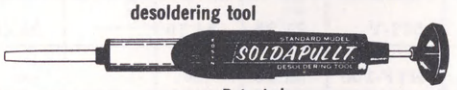
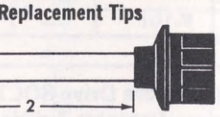
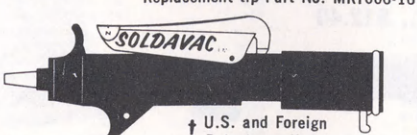
The World's Most Unique Line of Practical Solder Handling Tools.

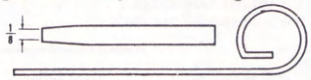
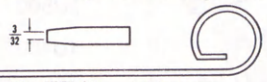
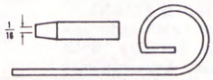


EDSYN INC

DESOLDERING + RESOLDERING =

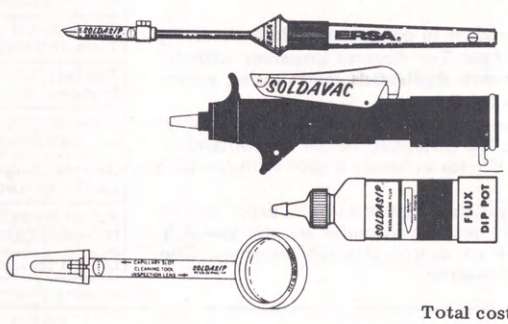
SOLDER (EDSYN®) ABILITY

	UNIT Quantity	PRICE Each
DS007-17 Deluxe Model Soldapullt® desoldering tool † Patented wt. 5 oz. △ □	1-25 26-50 51-100 101-500 501-up	$9.95 $9.20 $8.45 $7.70 $7.20
DRT008-18 Deluxe Replacement Tips  fits on Deluxe Model DS007 only	1-25 26-50 51-100 101-up	$2.00 $5.50 $1.50 $1.25
SS001-11 Standard Model Soldapullt® desoldering tool wt. 4 oz. † Patented △ □	1-25 26-50 51-100 101-500 501-up	$5.95 $5.50 $5.00 $4.50 $4.00
SRT002-12 . Standard Replacement Tips  fits Standard Model SS001 and Soldavac Model SV026 only	1-25 26-50 51-100 101-up	$1.50 $1.25 $1.00 $ .75
MMS005-15 Micro Tipped Standard Model Soldapullt® desoldering tool wt. 4 oz. † Patented △ □	1-25 26-50 51-100 101-500 501-up	$6.95 $6.50 $6.00 $5.50 $5.00
MRT006-16 Micro Replacement Tips  fits Micro tipped Standard Model MMS005 only	1-25 26-50 51-100 101-up	$1.50 $1.25 $1.00 $ .75
LTS003-13 Long Tipped Standard Model Soldapullt® desoldering tool  wt. 4 oz.. † Patented △ □	1-25 26-50 51-100 101-500 501-up	$6.95 $6.50 $6.00 $5.50 $5.00
LRT004-14 Long Tipped Replacement Tips  fits Long tipped Standard Model LTS003 only	1-25 26-50 51-100 101-up	$2.00 $1.75 $1.50 $1.25
SV026 Soldavac™ desoldering tool—Standard tipped Replacement tip Part No. SRT002-12 **SV073 Soldavac™ desoldering tool—Micro tipped** Replacement tip Part No. MRT006-16  wt. 3 oz. † U.S. and Foreign Patents applied for. △ □	1-5 6-11 12-25 26-50 51-100 101-500 501-up	$3.95 $3.50 $2.95 $2.80 $2.65 $2.50 $2.35
"O" RINGS **O-SS30** Standard Soldapullt "O" Ring **O-DS31** Deluxe Soldapullt "O" Ring **O-SVB32** Soldavac Black Plunger "O" Ring **O-SVW33** Soldavac White Bumper "O" Ring	1-50 51-up	$ .25 $ .20

	UNIT Quantity	PRICE Each
45ET011-21 45 Degree Extension Tip and Cleaning Shaft fits all models except Micro Tip MMS005 and SV073	1-25 26-50 51-100 101-up	$2.75 $2.50 $2.25 $2.00
LET012-22 Long Extension Tip and Cleaning Shaft  fits all models except Micro Tip MMS005 and SV073	1-25 26-50 51-100 101-up	$2.25 $2.00 $1.75 $1.50
MET013-23 Micro Extension Tip and Cleaning Shaft  fits all models except Micro Tip MMS005 and SV073	1-25 26-50 51-100 101-up	$2.00 $1.75 $1.50 $1.25
MIN014-24 Mini Tip Extension and Cleaning Shaft  fits all models except Micro Tip MMS005 and SV073	1-25 26-50 51-100 101-up	$2.00 $1.75 $1.50 $1.25
SOLDASIP™ PRY TIP RESOLDERING TIP † SOLDASIP PRY TIP RESOLDERING TIP CAN BE USED TO SIP UP SOLDER, OR SOLDER AND AS A SOLDERING AID FOR PRYING LEADS UP FROM CIRCUIT BOARDS OR OFF WIRE TERMINALS. — FITS ERSA MULTITIP 15W AND ERSA TIP 16 ONLY.	1-25 26-50 51-up	$2.95 $2.75 $2.50

X-34 Experimenter's SOLDER (EDSYN) ABILITY Kit

$10.95 — 30 DAY FREE TRIAL



	$6.50
	$2.95
	$1.75
	$1.50
Total cost	$12.70
You save	$1.75
Your cost only	$10.95

	UNIT Quantity	PRICE Each
BT028 BURNISHING TOOL CLEANS SOLDASIP TIP OR RELAY CONTACTS	1-5 6-11 12-25 26-50 51-100 101-up	$1.95 $1.70 $1.50 $1.40 $1.30 $1.20
RBB029 BURNISHING TOOL REPLACEMENT BLADES 	1-25 26-50 51-up	$ .50 $ .40 $ .30

△ 6 month warranty on tools only. Warranty does not include tips.

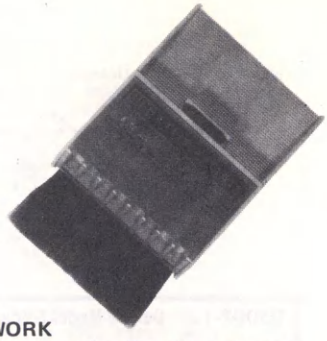
□ 12 page Solderability Manual included with tools.

STATICMASTER

MODERN PRODUCTS TO ELIMINATE STATE ELECTRICITY

NEW EXTRA STRENGTH 1" staticmaster
Especially suited for 35mm photography, it is an indispensable tool for the cleaning of transparencies, negatives, and lenses. It is also useful wherever problems arise due to the attraction of foreign particles to nonconductive surfaces.

NEW EXTRA STRENGTH 3" staticmaster
Designed for cleaning larger surfaces, it is preferred by those desiring the time-saving convenience of a larger model. Featured is a retractable brush for adjusting bristle stiffness and distance between polonium source and surface being cleaned.



APPLICATIONS STATICMASTER BRUSHES CLEAN:

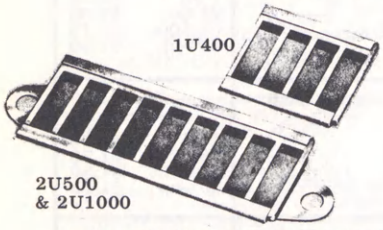
- Photographic negatives
- Transparencies
- Optices
- Balance pans
- Plastic parts or sheets
- Delicate Instruments
- Small precision assemblies

PRICE LIST STATICMASTER BRUSHES

Model	Description	Price
1C200	1" Brush—200 Microcuries	5.95
	1C200 Replacement Cartridge	3.95
3C500	3" Brush—500 Microcuries	12.95
	3C500 Replacement Cartridge	7.95
	Connector for joining 3" models	1.75

HOW THEY WORK

STATICMASTERS contain a sealed foil source of radioactive polonium 210 securely mounted under a protective metal grid. The polonium source emits alpha radiation which is nonpenetrating and, therefore, harmless externally. When alpha rays collide with air molecules they create a dense concentration of ionized air. The ionized air provides a conductive path to bleed away surplus ions from statically charged materials. The neutralization of static electricity on nonconductive materials eliminates the affinity for foreign particle attraction and prevents inaccuracy of measurements or handling problems.

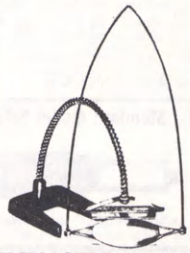


STATICMASTER IONIZING UNIT
models 1U500, 2U1000 & 1U400
Extra powerful Polonium elements encased in stainless steel housing with convenient mounting tabs. Smaller size shown without mounting tabs, model 1U400.

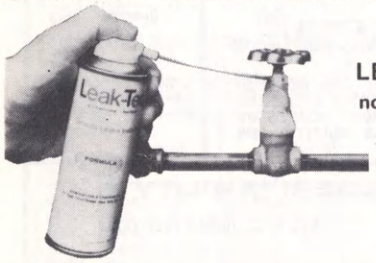
APPLICATIONS
• balances • microtome slicers • hardness testers • optical lens instruments • filters • semiconductor parts • magnetic tape punched cards.

MODEL	DESCRIPTION	PRICE
2U500	2 15/16" x 7/8" x 7/32" Ionizing Unit 500 Microcuries	12.75
1U400	1" x 7/8" x 7/32" Ionizing Unit 400 Microcuries	12.75
*2U1000	2 15/16" x 7/8" x 7/32" Ionizing Unit 1000 Microcuries	22.50
BF1	Positioner with Base and Flexible Arm for use with Ionizing Units	7.00
*4U1000	4" x 3/4" x 5/16" Ionizing Bar 1000 Microcuries	24.50

Last item available up to 60" long. Add $10.00 for each additional 2" length.



STATICMASTER POSITIONER
model BF1
This flexible arm assembly is used to place Staticmaster ionizing Unit model 2U500 or 2U1000 in any desired position. It permits complete freedom of the worker's hands, while the Polonium element neutralizes static electricity.



LEAK-TEC
now in 8 oz.
AEROSOL DISPENSER

At last a new concept in packaging of leak detecting fluids. The new Leak-Tec Aerosol dispenser with 6" extension tube makes application much easier, particularly for hard to reach areas.

Stream flow is easy to control, and therefore more economical to use. No potential danger of contamination to product. Comes in handy 6 pack with carrying handle.

Unbreakable Polystyrene bottle and rust proof dauber combination. All Leak-Tec formulas are still available in the familiar 4 oz. plastic squeeze dispenser. One dozen in a carton minium.

APPLICATION	FORMULA NUMBER	STANDARD FORMULA CTN 12	ZERO°F CTN 12	−35°F CTN 12	−65°F CTN 12
Compressed Air	372	$27.35	$32.11	$33.90	$35.20
Type I N., H., He. (Transformers, Generators, Cables) Temp. Range +35°F to +160°F	372A	30.85	—	—	—
Type II N.,H.,He. (Transformers, Generators, Cables) Temp. Range to −65°F	372C	—	—	—	39.60
Oxygen MIL-L-25567A (ASG) (STD) Type I Temp. Range +35°F to +160°F	16-OX	31.45	—	—	—
Oxygen MIL-L-25567A (ASG) (−65°) Type II Temp. Range −65°F to +35°F	OX-65-C	—	—	—	39.65
Aircraft, Missiles, Atomic, Refinery, Systems. Also Rubber, Plastic	277	27.75	32.00	33.90	36.40
Vacuum Testing (w or w/o ultraviolet examination)	577-V	31.25	34.75	—	38.40
General Purpose Indicator. Temp. range 160°F to 190°F	HTF-100	31.80	—	—	—
Sulfur Hexafluoride, Argon, Carbon Dioxide, Carbon Monoxide	377	31.25	34.75	—	—
Liquid Halocarbon	F-101	—	—	31.45	—

REVERSIBLE RATCHET HANDLES
for Xcelite "99" tools

Series 99 (Tips not included)

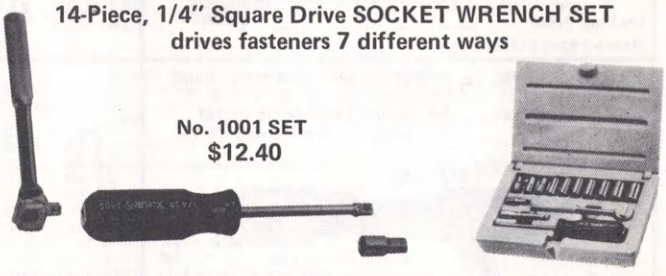
No. 99-1R
$4.95

No. 99-4R
$4.95

Both regular (99-1R) and Tee (99-4R) types accept more than 60 individually available nutdriver, screwdriver, and special purpose snap-in blades.

Fully enclosed ratchet mechanism is built to highest socket wrench quality standards. Recessed reversing shift operates at the flick of a thumb. Patented spring chuck holds blades firmly.

14-Piece, 1/4" Square Drive SOCKET WRENCH SET
drives fasteners 7 different ways



No. 1001 SET
$12.40

REVERSIBLE RATCHET—Precision made, long life, fully enclosed mechanism. Short handle swing for close work.

UNIQUE SPINNER/EXTENSION—5 3/4" overall. Plastic (UL) handle with 1/4" sq. drive socket insert for ratchet. Use also as regular nutdriver.

2" DRIVE EXTENSION—Fits ratchet or either end of spinner/extension.

RUGGED, HEAT TREATED, ALLOY STEEL SOCKETS—Nine for hex sizes 3/16" thru 1/2". Two duel purpose for hex and square sizes 1/4" and 5/16"

PRICE CHANGE FROM CATALOG #16 & SUPPLEMENT #A-1

Page 7
INDUSTRONIC PLIERS
(BOKER) . . . . . Discontinued

Page 8
INDUSTRONIC PLIERS
(BOKER) . . . . . Discontinued

Page 9
INDUSTRONIC PLIERS
(BOKER) . . . . . Discontinued

Page 10
UTICA PLIERS
U16611 . . . . . $ 3.75
U13246 . . . . . 6.85
U13224-22 . . . . . 21.50
U14616 . . . . . 4.30
U13425 . . . . . 5.35
U13234-22 . . . . . 6.40
U14855 . . . . . 6.15
U14534 . . . . . Discontinued
U13845 . . . . . 6.60

Page 11
UTICA PLIERS
U75317 . . . . . $ 4.90
U16126-43 . . . . . 6.50
U16585-43 . . . . . 6.10
U75263 . . . . . 5.40
U14215-22 . . . . . 5.80
U18802 . . . . . 26.75
U16135-43 . . . . . 7.30
U75316 . . . . . 6.40
U14544 . . . . . Discontinued
U75318 . . . . . 5.35
U15165-00 . . . . . 7.20
U16388 . . . . . 4.50

Page 12
UTICA PLIERS
U13244 . . . . . $ 5.00
U16215-58 . . . . . 5.25
U14536-22 . . . . . 7.15
U13214-22 . . . . . 5.00
U16526 . . . . . 4.80
RW200 . . . . . 76.80
RS224 . . . . . 18.80
RS244 . . . . . 21.10
RS264 . . . . . 26.80
RB221 . . . . . 29.20
RB241 . . . . . 30.50
RB261 . . . . . 27.10
141 . . . . . 5.30

Page 13
DIAMALLOY PLIERS
LC-55RP . . . . . $ 6.60

Page 14
DIAMALLOY PLIERS
NN54RP . . . . . $ 4.75
EC4FRP 4.85
DN54RP 3.75
LC55-1RP 7.75
NN541-RP 4.80
GA54RP 6.80
GA54-4RP 20.00
LN551RP 4.60
LN54RP 3.90
SC54RP 4.40
SN54RP 4.30

Page 15
LINDSTROM PLIERS
36-226 . . . . . $ 6.95
36-237S 9.75
36-238S 9.75
36-234S 9.30
36-235S 9.75
36-242S 9.45
36-246S 9.75
36-231S 9.30
36-232S 9.75
36-221 . . . . . 6.95
36-224 . . . . . 7.45
36-226 . . . . . 6.95
36-227 . . . . . 7.45
36-229 . . . . . 7.30
36-228 . . . . . 6.90

Page 16
LINDSTROM PLIERS
36-303 . . . . . $21.50
36-302 . . . . . 19.95
36-305 . . . . . 24.50
36-514 . . . . . 5.85
36-511 . . . . . 3.25
36-512 . . . . . 3.25
36-077 . . . . . 5.85
36-079 . . . . . 6.40
36-119S 8.00
36-118S 7.60
36-114S 7.70
36-113S 7.25
36-726S 5.00
36-727S 5.00

Page 17
See New Supplement B-2 for $ Savings
ERAMADIUM PLIERS
A86E . . . . . $ 7.70
A86EL 8.20
A99E 7.00
A99EL 7.40
A97E 5.25
A97EL 5.50
A74EL 13.75
A35E 12.75
A84E 7.75
A84EL 8.20
A95AE 7.45
A95AEL 8.15
A92AEL 9.25
A73EL 11.90
A90EL 15.70

Page 18
ERAMADIUM PLIERS
A69AEL $17.00
A81EL 11.90
A59EL 15.60
A13BE-L 16.20
A13C-L 11.40
A57E 16.45
A57EL 16.90
A71AE 16.60
A56 . . . . . 16.45
A13DE-L 13.65
A14-AL 10.10
A97S-A11S 16.80

Page 19
MICROMADIUM PLIERS
111 . . . . . $14.10
110 . . . . . 14.10
105 . . . . . 12.80
114 . . . . . 17.75
118 . . . . . 20.25
104 . . . . . 12.80
101 . . . . . 12.80
108 . . . . . 12.80
109 . . . . . 14.10
120 . . . . . 25.25
115 . . . . . 17.75
117 . . . . . 12.80
102 . . . . . 12.80
106 . . . . . 12.80
119 . . . . . 20.25
103 . . . . . 12.80
116 . . . . . 20.30
107 . . . . . 12.80

Page 20
VIGOR PLIERS
PL-301-4 . . . . . $ 8.00
PL-302-4 . . . . . 8.00
PL-297 . . . . . 7.35
PL-504A 6.60
PL-504B 7.80
PL-504C 7.80
PL-404 . . . . . 6.55
PL-405 . . . . . 6.90
PL-1300 . . . . . 7.10
PL-204 . . . . . 4.60
PL-205 . . . . . 5.55
PL-206 . . . . . 6.10
PL-304 . . . . . 5.35
PL-504 . . . . . 6.35
PL-504N 7.35
PL-505 . . . . . 6.80
PL-506 . . . . . 7.60
PL-104 . . . . . 5.35
PL-105 . . . . . 5.75
PL-106 . . . . . 6.10
PL-254 . . . . . 7.10
PL-255 . . . . . 7.20

Page 21
VIGOR PLIERS
PL-51-4 . . . . . $ 6.50
PL-52-4 . . . . . 6.50
PL-804 . . . . . 8.80
PL-219 . . . . . 8.80
PL-219N 16.00
PL-217-4 . . . . . 8.80
PL-217C-4 . . . . . 8.80
2646HA . . . . . Discontinued
PL-309 . . . . . 6.10
PL-204 . . . . . 7.00
177 . . . . . 5.25

Page 22
VIGOR PLIERS
PL-1005 . . . . . $ 3.95
PL-504 . . . . . 4.90
PL-1405 . . . . . 7.90
PL-1405F 8.50
PL-1406 . . . . . 7.40
PL-1456 . . . . . 7.40
PL-1404 . . . . . 5.35
PL-1454 . . . . . 5.35
PL-1405 . . . . . 5.55
PL-1406 . . . . . 5.55
PL-1205 . . . . . 3.95
PL-204 . . . . . 6.15
PL-1406J 7.80
PL-1406K 7.40
PL-1456K 7.40
PL-1105 . . . . . 3.95
PL-1504 . . . . . 6.35
PL-1506 . . . . . 6.60

Page 27
TWEEZERS
215A . . . . . $ 8.00
215AP 8.00
T5 . . . . . 6.60
T4 . . . . . 4.25
T8L 7.25
T6L 6.90
T12 . . . . . 6.50
T8 . . . . . 5.60
T18 . . . . . 7.95
4 Finger versions of 4T . . . . 1.40 ea.
Extra Long Models 3.95

Page 28
See New Supplement B-2 for Savings
WAF-O-GRIP
85CSA $12.15
86BSA 12.15
85BSA 13.40
87BSA 12.15
65AS 6.75
5CS 6.25
66S 8.00

Page 29
TWEEZERS
100 . . . . . $ 2.00
101 . . . . . 2.00
104 . . . . . 2.00
B-50 . . . . . 3.60
B-47 . . . . . 3.60
AWG 7.50
AW 8.50

Page 31
CLAUSS SCISSORS
FL 4 1/2 . . . . . $ 3.75
TC 4 1/2 . . . . . 3.95

Page 32
CLAUSS SCISSORS
610 . . . . . $ 3.65
57 . . . . . 3.50
612 . . . . . 5.20

Page 33
CLAUSS SCISSORS
76 1/2 . . . . . $ 4.60
76 1/2S 4.65
75 . . . . . 3.75
33 1/4 . . . . . 5.15
43 1/2 . . . . . 4.25
925C 3.75
SH 10 . . . . . 4.95
PD 1 . . . . . 1.25
SG 10 . . . . . 4.95
Model SS-2 . . . . . Discontinued

Page 38
ULLMAN MIRRORS
A-2 . . . . . $ 1.85
K-2 . . . . . 2.90
B-2 . . . . . 1.90
S-2 . . . . . 3.50
C-2 . . . . . 2.90
MM-2 . . . . . 10.25
E-2 . . . . . 1.90
P-5 . . . . . 2.60

Page 39
BAUSCH & LOMB LOUPES
81-41-12 . . . . . $ 3.00
81-41-70 . . . . . 3.00
81-41-71 . . . . . 2.50
81-41-72 . . . . . 2.00
81-41-73 . . . . . 2.00
81-41-74 . . . . . 2.00
81-41-75 . . . . . 2.00
81-41-76 . . . . . 2.00
81-41-77 . . . . . 2.00
81-41-08 . . . . . 5.50
81-41-05 . . . . . 3.50
81-41-13 . . . . . 12.50
BAUSCH & LOMB LOUPES WITH HEADBAND
81-41-06 . . . . . $ 4.00
81-41-09 . . . . . 6.00
81-41-90 . . . . . 3.50
81-41-91 . . . . . 3.00
81-41-92 . . . . . 2.50
81-41-93 . . . . . 2.50
81-41-94 . . . . . 2.50
81-41-95 . . . . . 2.50
81-41-96 . . . . . 2.50
81-41-97 . . . . . 2.50
81-41-99 50
RAY BAND LOUPES
81-41-56 . . . . . $ 4.50
81-41-57 . . . . . 3.00
81-41-66 . . . . . 4.00
81-41-67 . . . . . 2.50
81-41-68 . . . . . 4.25
81-41-69 . . . . . 6.00
EYEGLASS LOUPES
81-41-17 . . . . . $ 4.75
81-41-18 . . . . . 4.75
81-41-27 . . . . . 4.75
81-41-37 . . . . . 4.75
81-41-47 . . . . . 4.75
81-41-78 . . . . . 6.00
81-41-79 . . . . . 6.00

Page 42
OPTICAL MAGNIFIERS
81-34-46 . . . . . $16.50
81-26-14 . . . . . 1.50
81-61-27 . . . . . 9.00
81-61-31 . . . . . 9.00
81-61-35 . . . . . 9.00
81-61-41 . . . . . 9.00
81-61-25 . . . . . 9.00
81-61-68 . . . . . 13.00
81-61-71 . . . . . 13.00
81-61-75 . . . . . 13.00
81-61-80 . . . . . 18.50

Page 43
MEASURING AND INSPECTING MAGNIFIERS
81-34-35-01 . . . . . $45.00
81-34-36 . . . . . 8.00
81-34-37 . . . . . 8.00
81-34-39 . . . . . 8.00

Page 44
LAMPS
6480 . . . . . $19.95
6400 . . . . . 10.95
6400 Power Supply 10.95
7500 . . . . . 26.50
6490 . . . . . 19.95
5900 . . . . . 52.95
5979N 14.95
7152 . . . . . 21.95
7153 . . . . . 21.95
7154 . . . . . 21.95

Page 45
ASSEMBLY LAMPS
7166 . . . . . $129.95
7168 . . . . . 149.95
7066 . . . . . 109.95
7068 . . . . . 124.95
6483 . . . . . 8.95
6484 . . . . . 9.95
6482 . . . . . 13.95
7174 . . . . . 29.50
7175 . . . . . 26.95
7176 . . . . . 29.95
6483 . . . . . 8.95
6484 . . . . . 9.95
6482 . . . . . 13.95
FS 24.95

Page 47
LUXO LAMPS
FL-1-A, B, C $37.95
FL-2-A, B, C 37.95
FL-2-FE 48.45
ILLUMINATED HAND MAGNIFIER
HFM w/3cc $39.95
HFM-ST w/3cc 48.05

Page 48
SURFACE COMPARATOR
81-34-30 . . . . . $35.00

Page 49
MAGIC TIP SCREWDRIVERS
10E3 . . . . . $ 2.60
10E4 . . . . . 3.10
10E7 . . . . . 3.25
10M3 . . . . . 2.50
10M5 . . . . . 3.10
10M8 . . . . . 3.40
10M12 . . . . . 3.70
10A 2.65
10B 3.25
10C 3.30
10D 3.70
"SMITTY" HEX DRIVER
1P5 . . . . . $ 1.65
1P6 . . . . . 1.60
1P7 . . . . . 1.65
1P8 . . . . . 2.40
SHOCKPROOF HEX DRIVERS
K5MI $15.50
K5NI 5.00
5D 95
5DI 95
5E 95
5F 1.05
5G 1.15
5H 1.40
5I 1.65
4Y 95
4Z 95
5 95
5A 80
5B 95
5C 90
5C1 95
DRIVER KITS
K-12C $11.95
K-116A 7.25

Page 50
ULLMAN SCREW STARTERS
SD-775M . . . . . $ 1.65
1037 . . . . . 8.65
D-1 . . . . . 1.95
10(+) 1.75
D-2 . . . . . 2.20
10(+) 2.00
D-3 . . . . . 2.50
10(+) 2.25
D-4 . . . . . 3.45
10(+) 3.10
PD-9 . . . . . 2.50
10(+) 2.25
PD-10 . . . . . 2.70
10(+) 2.40
PD-10 . . . . . 2.95
10(+) 2.50
PD-12 . . . . . 3.80
10(+) 3.60
N-1 . . . . . 2.50
10(+) 2.25
N-2 . . . . . 2.65
10(+) 2.40
N-3 . . . . . 2.90
10(+) 2.70
N-4 . . . . . 3.90
10(+) 3.70
PN-9 . . . . . 2.50
10(+) 2.25
PN-10 . . . . . 2.70
10(+) 2.50
PN-11 . . . . . 2.95
10(+) 2.65
PN-12 . . . . . 3.80
10(+) 3.45

Page 51
MICRO SCREWDRIVER SETS
24M $15.50
24B11 . . . . . 3.00
24V 4.95
24U 4.25
2401 . . . . . 4.50
SH-2 . . . . . 2.25
#42 SCRIBE . . . . . $ 1.75
DRILLS (TINY TAP)
#60 . . . . . $ 3.75
#70 . . . . . 4.95

Page 53
MOODY SCREWDRIVER KITS

	1-5	6+
#TS-5	$ 8.50	$ 8.25
#SW-5	4.25	4.00
#BW-5	4.95	4.50
#MMK-6	29.95	24.95
#OE-5	3.25	2.95
#OE-5A	3.25	2.95
#PA-5	3.25	2.95
#JS-6	4.95	4.50

Page 54
ADJUSTABLE TORQUE LIMITING SCREWDRIVERS
PM-5 . . . . . $20.00
CAL-30 . . . . . 36.00
CAL-35 . . . . . 38.00
M-CAL-30 . . . . . 36.00
TORQUE ANALYZER TEST KITS
H 1650 or MH 1650 . . . . . $285.00
H 5, MH 5, H 010 or MH 010 165.00
TORQUE CONTROL SYSTEMS
DWTS-010 . . . . . $135.00
DWTS-5 . . . . . 240.00
DWTS-1500 . . . . . 400.00

PRICE CHANGE FROM CATALOG #16 & SUPPLEMENT #A-1

Page 55

TORQUE SCREWDRIVER BITS
- Allen Bits No. 8190 ..... $ .90
- Phillips Bits No. 1 ..... 1.10
- SS Set No. 819182 ..... 4.80

TORQUE LIMITING SCREWDRIVERS
- Mini-Master 1 ..... $22.50
- Minor 2 ..... 19.50
- Major 4 ..... 22.50

Page 58

NO-NIK WIRE STRIPPER .... $ 9.00

Page 59

STRIPPERS
- Twin Cone $205.00
- General Purpose 19.95
- General Purpose w/accs. 22.50
- Rotary Wire Stripper 250.00
- Replacement Blades 8.50

WIRE GAUGES
- 093 ..... $ 6.95
- 097 ..... 6.95
- Replacement Blades 1.25
- Wire Stop 1.10

DEMAGNETIZERS
- 13-001 ..... $82.00
- 13-011 ..... 45.00

Page 60

THERMO STRIP
- 5589 ..... $ 2.50
- 5751 ..... 2.50
- 5753 ..... 2.50
- Thermo Strip Comp. 85.50
- Replacement Elements pkg. of 12 ..... 2.30

SWIVEL BLADES
- L-7486 ..... $ 1.50

Page 61

LEAD BENDER
- N-300 ..... (1-10) $32.50 ea.
  (11-25) 29.25 ea.
  (26-up) 26.95 ea.

Page 64

See New Supplement B-2 for Savings

UNGAR PRODUCTS
- 270 ..... $ 9.28
- 400 ..... 1.32
- 4025 ..... .53
- 6939 ..... 16.10
- 6940 ..... 2.50
- 6941 ..... 2.37
- 6943 ..... 2.37
- 6944 ..... 2.37
- 6945 ..... 2.37
- 6946 ..... 2.37
- 6947 ..... 2.37
- 6948 ..... 1.98
- 6970 ..... 2.70
- 6971 ..... 35.00
- 6992 ..... 5.85
- 7000 ..... 17.75
- 7070 ..... 23.25
- 7805 ..... 5.98
- 8000 ..... 1.48
- 8001 ..... 2.30
- ..... .89

Page 65

See New Supplement B-2 for Savings

UNGAR ACCESSORIES
- 776 ..... $ 2.02
- 777 ..... 2.02
- 4033 ..... 3.67
- 4035 ..... 3.67
- 4036 ..... 3.67
- 4037 ..... 3.67
- 4039 ..... 3.67
- 4045 ..... 3.67
- 1233 ..... 2.53
- 1235 ..... 2.53
- 1236 ..... 2.53
- 1237 ..... 2.53
- 1239 ..... 2.53
- 533 ..... 1.75
- 536 ..... 1.75
- 537 ..... 2.02
- 539 ..... 1.75
- 6100 ..... 1.87
- 6102 ..... 2.70
- 6103 ..... 3.97
- PL-111 ..... .93
- PL-113 ..... .93
- PL-116 ..... .93
- PL-331 ..... .72
- PL-332 ..... .72
- PL-333 ..... .72
- PL-338 ..... .72
- PL-340 ..... .72
- PL-823 ..... .82
- PL-824 ..... .82
- PL-833 ..... 1.17
- PL-834 ..... 1.17
- 7012 ..... .72
- 7062 ..... 1.32
- 7155 ..... .72
- 6203 ..... 5.75
- 6526 ..... 5.00
- 6550 ..... 1.52
- 6551 ..... 1.52
- 6553 ..... 1.52
- 6554 ..... 1.52
- A6304 ..... 1.30
- A6305 ..... 1.30
- A6313 ..... 1.30
- A6316 ..... 1.30
- A6319 ..... 1.30
- A6325 ..... 1.30
- A6331 ..... 1.30
- A6336 ..... 1.30
- A6372 ..... 1.53
- A6381 ..... .93
- A6382 ..... 1.80
- B6312 ..... 1.30
- B6318 ..... .58
- B6324 ..... .58
- 6391 ..... .93
- 6392 ..... 1.80
- 535 ..... 1.75
- PL-114 ..... .93
- A6333 ..... 1.30

Page 66

See New Supplement B-2 for Savings

PRINCESS PRODUCTS
- 6906 ..... Discontinued
- 6910 ..... $4.55
- 6915 ..... 4.55
- 6918 ..... 4.55
- 6950 ..... .45
- 6951 ..... .45
- 6952 ..... .45
- 6953 ..... .83
- 6960 ..... .78
- 6961 ..... .78
- 6962 ..... .78
- 6963 ..... 1.52
- 6990 ..... 3.93
- 6991 ..... .60
- Packaged Combination 9.19
- Soldering Handles 3.43
- T2 ..... 17.50
- Tips ..... 3.00 ea.

Page 68

AMERICAN BEAUTY PRODUCTS
- T-6 1-3 ..... $25.50
- 4-7 ..... 24.95
- 7+ 23.95
- T-6 TIPS 1-3 ..... 5.50
- 4+ 4.95
- 575 IRON HOLDER 3.35
- V3000 ..... 49.00
- 475 STAND 11.35
- 476-SG STAND 13.10
- 82000 IRON 11.35
- 82500 IRON 11.35
- 3108 ..... 5.15
- 3110 ..... 5.15
- 3112 ..... 6.90

Page 69

WASSCO PRODUCTS

	1-3	4+
105A-3	$ 46.00	$ 41.00
10542	3.20	2.90
10545	.65	.57
105131	17.50	16.95
10544	20.00	18.00
10517	20.00	18.80
10512	6.65	5.70
10519	10.00	9.00
10591	16.65	15.80
10515	12.50	11.85
10541	20.00	18.00
105133	17.50	16.75
10578	16.65	15.80
105123	16.65	15.80
105A-5	178.00	150.00

Page 71

SOLDERING IRONS
- 3220 ..... $ 8.30
- 3225 ..... 8.30
- 3230 ..... 8.30
- 3236 ..... 8.30
- 3240 ..... 8.30
- 3245 ..... 8.30
- 3250 ..... 8.50
- 3325 ..... 8.55
- 3330 ..... 8.55
- 3335 ..... 8.55
- 3340 ..... 8.55
- 3345 ..... 8.55
- 3350 ..... 8.55
- 210-M 1.10
- 211-M 1.10
- 220-M 1.10
- 230-M 1.10
- 240-M 1.10
- 241-M 1.10
- 250-M 1.10
- 210-1-M 1.20
- 310-M 1.25
- 311-M 1.25
- 320-M 1.25
- 321-M 1.25
- 330-M 1.25
- 340-M 1.25
- 341-M 1.25
- 310-1-M 1.35
- 310-2-M 1.35
- 321-2-M 1.35
- 330-2-M 1.35
- 340-2-M 1.35

SOLDERING IRON HOLDER
- HC-4 ..... $ 9.75
- HC-5 ..... 15.00

SOLDERING POTS
- 12 ..... $ 11.50
- 12C 14.50
- 12T 25.50
- 36 ..... 12.75
- 36C 16.50
- 36T 26.50
- 37 ..... 17.50
- 37C 22.50
- 37T 31.50
- 20 ..... 41.50
- 80T 99.00
- 85T 195.00

Page 72

WELLER SOLDERING PENCIL
- W-TCP 2 ..... $49.75

Page 76

DYTEX WORK POSITIONERS
- D28-120 ..... $ 75.00
- D28-122 ..... 75.00
- D28-125 ..... 67.50
- D28-12 ..... 81.00
- D3000-120 ..... 112.50
- D3000-122 ..... 112.50
- D3000-125 ..... 105.00
- 371 ..... 12.26
- 372 ..... 16.67
- 353 ..... 15.62
- 364 ..... 18.69

Page 77

TOOL KITS
- K-1050 ..... $31.50

Page 79

RETRACTABLE BLADE KNIFE
- E-20S ..... $ 3.10

X-ACTO TOOL CHEST
- 86 ..... $15.95

Page 80

ASSEMBLY ACCESSORIES
- PV-1 ..... $ 1.75
- PV-2 ..... 1.75
- SR-950 ..... 1.40
- SR-951 ..... 1.90

Page 81

ASSEMBLY ACCESSORIES
- Set of 3: No. 10,11,12 ... $1.50 ea. $4.00 per set
- #1 ..... .85
- #2 ..... .85
- #3 ..... .85
- #1, #2, or #3 ..... 10.50 dz.

Page 82

ASSEMBLY ACCESSORIES
- Engineers Product ..... $ 7.50
- Cramolin Spray R 3.25

CRAMOLIN (RED)
- 2 oz. bottle ..... $ 2.25
- 1/2 pint bottle 7.45
- 1 pint bottle 14.50
- 1 quart bottle 28.00
- 6 oz. spray 3.25

CRAMOLIN SPECIAL (BLUE)
- 2 oz. bottle ..... $ 2.55
- 1/2 pint bottle 8.25
- 1 pint bottle 16.00
- 1 quart bottle 31.00
- 6 oz. spray 3.75

CRAMOLIN PASTE
- 1/4 kg. can (½ lb.) ..... $ 2.90

Page 83

SOLDERING AIDS
- 348 ..... $ 3.50
- 348a ..... .50
- 348b ..... .40
- 348c ..... .50
- 348d ..... .50
- 348e ..... .70
- 348h 1.10

MICRO SOLDERING AIDS
- 51C1 ..... $ 1.20
- 51C2 ..... 1.20

Page 84

UNIVERSAL TEST CLAMPS
- H2 1-9 ..... $2.25 ea.
  - 10-99 ..... 1.75 ea.
  - 100-250 ..... 1.45 ea.
- H3 1-9 ..... 2.35 ea.
  - 10-99 ..... 1.85 ea.
  - 100-250 ..... 1.53 ea.
- P-1 1-9 ..... 2.60 ea.
  - 10-99 ..... 2.10 ea.
  - 100-250. ..... 1.73 ea.

Page 85

ASSEMBLY ACCESSORIES
- 10"H, 14"W, 10"D. ... Discontinued
- WS-150 ..... $1.70

Page 86

ASSEMBLY ACCESSORIES
- Model 100 ..... $25.10
- Caliputer 15.00

Page 88

FOREDOM PRODUCTS
- DD ..... $ 85.00
- GG 100.00
- 2A5 ..... 47.00
- 4T 62.00
- 335 ..... 50.00
- 88 ..... 16.00

Page 89

GRINDING TOOLS
- No. 801 ..... $5.50
- K-200GM ..... Discontinued

Page 90

ACCESSORY KITS
- 20 ..... $12.25
- 30 ..... 12.75
- 40 ..... 8.25
- 50 ..... 6.75
- 60 ..... 11.25
- 70 ..... 6.00
- 80 ..... 6.50
- 120 ..... 7.00

Page 91

GRINDING BURS, CARBIDE
- 1/2-959 ..... $2.10 ea.

Page 93

MOUNTED DIAMOND POINTS AND WHEELS
- 210-10 ..... $ 6.30
- 260-4 ..... 6.30
- 260-8 ..... 6.30
- 265-8 ..... 6.30
- 270-7 ..... 6.30
- 280-9 ..... 6.30
- 280-10 ..... 6.30
- 285-7 ..... 6.30
- 290-9 ..... 6.30
- 556-4 ..... 6.30
- 556-5 ..... 6.30
- 556-7 ..... 6.30
- 557-4 ..... 6.30
- 557-5 ..... 6.30
- 557-7 ..... 6.30
- 558-7 ..... 6.30
- 559-7 ..... 6.30
- 560-7 ..... 6.30
- 699-9 ..... 6.30
- 700-7 ..... 6.30
- 700-9 ..... 6.30
- 700-12 ..... 6.30
- 701-7 ..... 6.30
- 701-9 ..... 6.30
- 701-10 ..... 6.30
- 702-7 ..... 6.30
- 702-9 ..... 6.30
- 702-12 ..... 6.30
- 704-2 ..... 6.30
- 704-3 ..... 6.30
- C1X 9.20
- C2 ..... 9.20
- C3 ..... 9.20
- C7 ..... 9.20
- C8M 9.20
- C8 ..... 9.20

Page 93

- 771-9 ..... 6.30
- 771-12 ..... 6.30
- 772-9 ..... 6.30
- 772-12 ..... 6.30
- AP-1 ..... 6.30
- AP-3 ..... 6.30
- D-36 ..... 6.30
- D-37 ..... 6.30
- D-38 ..... 6.30
- 7X 6.30
- 7 ..... 6.30
- T-1 ..... 6.30
- D3P 6.30
- D4P 6.30
- D7P 6.30
- C27 ..... 9.20
- C25X 9.20
- C25 ..... 9.20
- C26 ..... 9.20
- 34 ..... 7.45
- 35 ..... 7.45
- 35T 7.45
- 110S 7.45
- 110 ..... 7.45
- 111 ..... 7.45

Page 94

ASSEMBLY ACCESSORIES
- 100 ..... $ 9.95
- 101 ..... 14.95
- 200 ..... 9.95
- 201 ..... 14.95

Page 95

OPTI-MAN ..... Discontinued

Page 96

AKRO-MILLS STORAGE CABINETS
- Model 17-136 ..... $14.99
- Model 18-228 ..... 25.70
- Model 17-024 ..... 14.99
- Model 17-320 ..... 22.99
- Model 18-320 ..... 22.99
- Model 17-416 ..... 22.99
- Model 18-416 ..... 22.99
- Model 17-715 ..... 22.99
- Model 18-715 ..... 22.99
- Model 17-909 ..... 22.99
- Model 18-909 ..... 22.99
- Model 18-608 ..... 22.99
- Model 18-956 ..... 22.99

Page 97

MICRO-AIR REGULATOR
- TS 906 ..... $24.95

Page 100

"VCI" Rust Inhibitor . $4.50/15 oz. can

Page 103

TEXWIPE PRODUCTS

TEXWIPE

	1-9	10+
4" x 4"	$36.00	$31.20
9" x 9"	27.95	24.50
12" x 12"	28.00	24.95

- FOAM SWABS 7.95
- OPTI-CLOTH 30.95/roll
- MICRO DUSTER 19.95
- MICRO REFILLS 35.50
- FILTER 10.25

FOAM CUBES
- 5/8" 17.80
- 5/16" 17.80
- FOAM PENCIL 8.00

PRECISION CLEANING KIT
- 1-9 ..... 29.95
- 10+ 24.95
- FREON TF AEROSOL 38.60
- FOAM WIPES 8.00

Page 104

480-S SPONGE REFILL .. $.65/per set

Page 105

See New Supplement B-2 for Savings

NUCERITE HOT PLATE
- HP-11415B $40.50

MICRO HOT PLATE
- HP-2305B $24.00

Page 106

ECONOMY DUST BOX
- 41-905-00 ..... $270.00
- 41-905-02 ..... 95.00
- 41-905-04 ..... 29.50
- 41-905-06 ..... 18.70
- 41-905-08 ..... 31.00
- 41-905-10 ..... 15.00
- 41-905-12 ..... 165.00
- 41-905-14 ..... 98.00
- 41-905-16 ..... 66.00
- 41-905-20 ..... 83.00
- 41-905-51 ..... 17.50
- 36-541-40 ..... 6.10

Page 107

NYLON GLOVES
- 6853 NSQ $19.95
- 6854 NSQ 19.95

Page 109

NEOPRENE INDUSTRIAL GLOVES
- 86-FH Sizes 7,8,&9 ... $12.75 doz.
- 86-FH Sizes 10 & 11 .. 14.10 doz.

DISPOSABLE GLOVES
- G-611 100 ..... $ 7.35
- 600 ..... Discontinued

"COMPAR" GLOVES
- GS-3 Size 8 & 9 $11.00 ea. ..... $118.00/dz.
- GS-3 Size 10 & 11 $11.35 ea. ..... 124.00/dz.

ALL PRICES SUBJECT TO CHANGE **F.O.B. PHILADELPHIA**

PRICE CHANGE FROM CATALOG #16 & SUPPLEMENT #A-1

Page 113
UNIMAT $149.50
1290 . . . . . 24.95
1240 . . . . . 19.95
1210 . . . . . 14.95
1040 . . . . . 10.95
1001 . . . . . 27.75
1002 . . . . . 29.95
2820 . . . . . 12.95
1010 . . . . . 11.50

Page 116
INTERGRATED TOOLS
#4916 . . . . . $9.95
#4917 . . . . . 2.50
#4918 . . . . . 3.50
#4919 . . . . . 2.75
TK-6 D.I.P. Kit 19.95
#52 Dual-In-Line Inserter . . . 8.75

Price Changes for Supplement 16-A-1

Page 1
ITEMS FOR DUAL INLINE PACKAGES
#4918 . . . . . $ 3.50
#4922 . . . . . 6.95
#4922-A 7.95

Page 2
See New Supplement B-2 for Savings

Page 7
FOREDOM POWER SCREWDRIVER
SQ-85, VP1 . . . . . $215.00
SQ-85 . . . . . 205.00

Page 10
See New Supplement B-2 for Savings.

Page 13
MAGNETIC & N.C. TAPE STORAGE
98-555 . . . . . $546.00
98-444 . . . . . 546.00
98-700 . . . . . 50.20
98-710 . . . . . 45.79
98-720 . . . . . 40.99
98-730 . . . . . 40.99

Page 18
DAZOR LAMPS
2134 . . . . . $39.75
134A3 . . . . . 43.75
2324 . . . . . 47.75
1104 . . . . . 26.25
1105 . . . . . 26.25
1102 . . . . . 25.25
1103 . . . . . 25.25
1100 . . . . . 22.70
1101 . . . . . 22.70
M-1470 . . . . . 62.75
M-1408 . . . . . 56.75
M-1409 . . . . . 54.75

Page 19
DAZOR LAMPS
M-208 . . . . . $59.75
M-209 . . . . . 57.75
M-270 . . . . . 65.75
M-210 . . . . . 78.75
45-611 . . . . . 6.95
45-612 . . . . . 6.95
45-613 . . . . . 6.95
45-614 . . . . . 6.95
45-615 . . . . . 6.95
L-8823 . . . . . 1.95
L-8824 . . . . . 1.95
L-8825 . . . . . 1.95
L-8826 . . . . . 1.95
L-8827 . . . . . 1.95

Page 20
WIRE CUTTER
No. 1024 . . . . . $23.95

Page 113
DREMEL
#260 . . . . . $24.95
#261 . . . . . 34.95
#224 . . . . . Disc.

Page 3
KLEIN TOOLS
D 257-4C $4.40
D 224-4 1/2 C 5.00
D 210-5C 5.50
D 202-5 . . . . . 4.70
D 202-5C 5.00
D 201 7NE 5.75
D 201 8NE 7.00
D 213-8NE 7.28
D 301-6C 4.35
D 322-4 1/2 . . . . . 3.85
D 327-4 1/2C 4.15
D 328-5 1/2C 5.00
D 301-6-SCPC 5.30
D 202 5SW 5.60
D 252-6-SW 5.90
D 203-5C 4.70
D 302-6 . . . . . 5.00
D 338-5 1/2C 5.90

Page 4
KLEIN TOOLS
D 230-46 . . . . . $ 6.90
D 261-6C . . . . . Disc.
D 211-6C 6.20
D 263-4C 9.40
D 366-6C 12.40
D 052-C 5.50
D 219-4C 5.30
D 209-4C 5.34
D 502-10 . . . . . 4.14
D 502-12 . . . . . 5.25
1000 MK 7.44
1002 MK 8.80

Page 5
KLEIN TOOLS
1550-2 . . . . . $3.00
1550-6 . . . . . 3.88
701-12 . . . . . 6.14
1218 C 19.00/100
1224 C 19.00/100
1232 C 19.00/100
5127 . . . . . 8.57
5168 . . . . . 6.54
5166 . . . . . 7.19
5207M 4.03
5207L 4.15

Page 89
HANDEE SERIES #6000 . . . . $31.50
6010 DELUXE $43.50

Page 72
WELLER PRODUCTS

	1-11	12-23	24+
WTCP	$24.05	$21.75	$19.30
WTCP-2	66.50	60.10	53.25

	1-24	25-99	100+
STA Tips	.95	.85	.75
STB Tips	.95	.85	.75
PT-A5 Tips	.95	.85	.75
PT-A6 Tips	.95	.85	.75
PT-A7 Tips	.95	.85	.75

Page 11
WELLER PRODUCTS
W-MCP $33.10
W-TCPL 77.70
W-60 . . . . . 11.60
W-100 . . . . . 14.55
PH-60 . . . . . 4.90
PH-100 . . . . . 5.90
All Tips—in "PT" Series, "MP Series and "CT" Series are now

1-24	25-99	100+
.95	.85	.75

PRICE CHANGE CATALOG #16

Page 10
16611 . . . . . $ 3.90
13246 . . . . . 7.65
13224-22 . . . . . 7.10
13164 . . . . . 22.65
14616 . . . . . 4.50
13425 . . . . . 5.60
13234-22 . . . . . 6.70
14855 . . . . . 5.85
14534 . . . . . Disc.
13845 . . . . . 6.95

Page 11
75317 . . . . . $ 5.15
75318 . . . . . 5.60
75316 . . . . . 5.15
16126 . . . . . 6.71
16585-38 . . . . . 6.60
75263 . . . . . 5.65
14215-22 . . . . . 6.05
18802 . . . . . 27.90
16135-43 . . . . . 7.65
14544 . . . . . Disc.
15165-00 . . . . . 7.55
16388 . . . . . 4.70

Page 12
13244 . . . . . $ 5.29
16215-58 . . . . . 4.30
14536-22 . . . . . 5.55
13214-22 . . . . . 5.50
16526 . . . . . 5.05
13175-11 . . . . . 5.05
RW-200 . . . . . 76.80
RS-224 . . . . . 18.80
RS-244 . . . . . 21.10
RS-264 . . . . . 26.80
RB-221 . . . . . 29.20
RB-241 . . . . . 30.50
RB-261 . . . . . 27.10

PRICE CHANGE SUPPLEMENT

Page 2
#447 Mini Dyke $16.50

Page 9
#700 By-Buk $14.95

Meeting your requirements promptly and economically is our goal. Your suggestions are welcome.

TECH ALLOY ROSIN SOLDERS

AE16 Especially developed to meet high speed production requirements in the electronics industry. This solder is a non-corrosive, non-hygroscopic, non-conductive, homogeneous alloy of virgin metals specifically blended and quality controlled to eliminate voids and insure peak performance. (It meets or exceeds **Federal Specifications QQ-S-571, Type RAP.**) The flux core is a combination of superior grade, water-white, natural rosin and a minute amount of a unique oxide removing agent that conditions surfaces to be soldered in a miniumum of time. Furnished on 1-pound spools.

Available from stock in the 60/40 Formulation—in the following diameters: .062"; .040"; .032"; .020". Specify packed in 1 16 spools—sealed to insure cleanliness.

TECH ALLOY SOLID WIRE SOLDER

Solid Wire Solder is a homogeneous alloy that is smooth and uniform—ideal for either hand soldering or for use with mechanical soldering equipment.

Type	Size	Core	Weight	Price
AE16	.062	Rosin	116	$3.95
AE16	.040	Rosin	116	3.95
AE16	.032	Rosin	116	4.50
AE16	.020	Rosin	116	3.95
Wire	.062	Solid	116	3.95
Wire	.032	Solid	116	3.95
Wire	.020	Solid	116	4.50

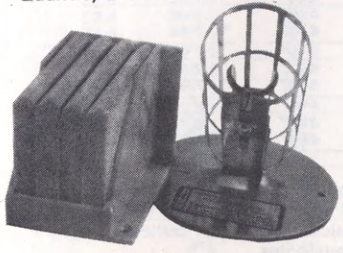
Quantity Discounts Available

FLUX No. 180 A solution of pure gum rosin, alcohol and a unique activating compound; this flux conforms to MIL-14256, Type A and is OPL approved. It is a fast acting flux designed for use in automatic soldering operations. The residues are less corrosive than comparable activated rosin fluxes.

8oz. . . . . $ 2.25
Gallon 18.00

FLUX No. 398S An organic formulation similar to No. 398W; this flux is water free and has the advantage of a rapidly evaporating solvent to insure elimination of spattering. The residues are inert and soluble in water.

8oz. . . . . $ 2.25
Gallon 18.00



Industrial Costs 1-9 $4.50
10-49 $4.25 50 & up $3.95

PORTABLE SOLDERING STATION

The "Sta-Tinned" solder cup, equipped with the specially processed heat retaining liner, keeps the soldering tip immersed in the reservoir of molten solder while idling. Thus it is ready for instant use. The adjustable slide permits use of Hexacon and other makes of 25-60 watt pencil type soldering irons. Positive protection is provided by a basket-type guard which encases both soldering iron and cup, yet maintains unrestricted air flow which prevents soldering iron or stand from overheating. Base has a self-supporting non-tip feature and is constructed of heavy gauges steel for long life. Base diameter is 4½ inches and height is 4½ inches.

- One pass of the soldering iron tip through the wet specially processed sponges cleans the entire tip simultaneously.
- Water well keeps the sponges wet all day, thereby saving operator's time.
- No lint or foreign matter to endanger solder connections.
- No flying solder.
- No scratching, or damage to plating on tip.
- No burning rags.
- Box of durable, high-impact styrene.
- Size 2½" x 2¾" x 3½".
- Improves appearance of work area.

*Replacement sponges available.

PRICE LISTS

GENUINE EREM PLIERS & CUTTERS

REFERENCE NUMBER	SIZE	1 to 11 PCS. NET	12 to 59 PCS. NET
1LH	6¾"	5.60	4.87
2H	6½"	5.16	4.48
2LH	6½"	5.60	4.87
4H	6"	4.65	4.04
4LH	6"	5.09	4.42
5H	5½"	3.84	3.34
5LH	5½"	4.28	3.72
5SH	5½"	4.28	3.72
7LH	6¼"	5.49	4.77
8H	6½"	4.25	3.69
8LH	6½"	4.68	4.07
9H	6½"	4.65	4.04
9LH	6½"	5.09	4.42
10H	6½"	4.65	4.04
10LH	6½"	5.09	4.42
11H	4¾"	3.18	2.77
11LH	4¾"	3.62	3.15
11SH	4¾"	3.62	3.15
11dH	4¾"	3.18	2.77
11dLH	4¾"	3.62	3.15
12H	4½"	3.40	2.96
12LH	4½"	3.84	3.34
12SH	4½"	3.84	3.34
13H	5½"	4.65	4.04
13LH	5½"	5.09	4.42
13aH	6"	5.01	4.36
13aLH	6"	5.45	4.74
13bEH	5½"	9.77	8.49
13bELH	5½"	10.21	8.87
13cH	5½"	6.84	5.95
13cLH	5½"	7.28	6.33
13dEH	5½"	8.24	7.16
13dELH	5½"	8.67	7.54
14H	4½"	3.62	3.15
14LH	4½"	4.06	3.53
14H	6"	4.14	3.59
14LH	6"	4.58	3.98
14aH	5¾"	6.04	5.25
14aLH	5¾"	6.48	5.63
14bH	6"	4.03	3.50
14bLH	6"	4.47	3.88
14cSH	6"	5.09	4.42
14dSH	6"	5.09	4.42
15H	4"	2.71	2.35
15LH	4"	3.15	2.73
15H	4½"	3.18	2.77
15LH	4½"	3.62	3.15
15H	5"	3.40	2.96
15LH	5"	3.84	3.34
15aH	4"	3.11	2.70
15aLH	4"	3.55	3.08
15aH	4½"	3.11	2.70
15aLH	4½"	3.55	3.08
15bH	4½"	2.93	2.54
15bLH	4½"	3.37	2.93
16H	4"	2.85	2.48
16LH	4"	3.29	2.86
16H	4½"	3.11	2.70
16LH	4½"	3.55	3.08
16H	5"	3.37	2.93
16LH	5"	3.81	3.31
16H	5½"	3.51	3.05
16LH	5½"	3.95	3.43
16aH	4"	3.18	2.77
16aLH	4"	3.62	3.15
16aH	4½"	3.18	2.77
16aLH	4½"	3.62	3.15
16aSH	4½"	3.62	3.15
17H	4"	3.04	2.64
17LH	4"	3.48	3.02
17H	4½"	3.11	2.70
17LH	4½"	3.55	3.08
17H	5"	3.11	2.70
17LH	5"	3.55	3.08
17aH	4"	3.04	2.64
17aLH	4"	3.48	3.02
17aH	4½"	3.18	2.77
17aLH	4½"	3.62	3.15
17aSH	4½"	3.62	3.15
17aH	5"	3.29	2.86
17aLH	5"	3.73	3.24
18H	4¾"	3.84	3.34
18LH	4¾"	4.28	3.72
18H	5½"	4.21	3.66
18LH	5½"	4.65	4.04
18H	6"	4.50	3.91
18LH	6"	4.94	4.29
19H	4¾"	3.40	2.96
19LH	4¾"	3.84	3.34
20H	4½"	3.37	2.93
20LH	4½"	3.81	3.31
20H	5"	3.59	3.12
20LH	5"	4.03	3.50
20H	6"	4.65	4.04
20LH	6"	5.09	4.42
20SH	6"	5.09	4.42

REFERENCE NUMBER	SIZE	1 to 11 PCS. NET	12 to 59 PCS. NET
21H	4¾"	4.06	3.53
21LH	4¾"	4.50	3.91
21SH	4¾"	4.50	3.91
22H	4½"	4.58	3.98
22LH	4½"	5.01	4.36
22SH	4½"	5.01	4.36
23H	4½"	4.65	4.04
23LH	4½"	5.09	4.42
23SH	4½"	5.09	4.42
24H	6"	4.65	4.04
24LH	6"	5.09	4.42
24SH	6"	5.09	4.42
25H	5½"	4.21	3.66
25LH	5½"	4.65	4.04
25SH	5½"	4.65	4.04
25aH	5½"	4.21	3.66
25aLH	5½"	4.65	4.04
25aSH	5½"	4.65	4.04
26H	8"	4.03	3.50
27H	5½"	5.05	4.39
27LH	5½"	5.49	4.77
27SH	5½"	5.49	4.77
28H	8"	4.03	3.50
29H	4½"	5.78	5.02
29LH	4½"	6.22	5.41
30H	4¾"	4.65	4.04
30LH	4¾"	5.09	4.42
30aH	4½"	7.98	6.93
30aLH	4½"	8.42	7.31
32H	7"	9.15	7.95
35ELH	4¾"	8.42	7.31
36H	4½"	4.21	3.66
36LH	4½"	4.65	4.04
36aH	4¾"	7.28	6.33
37H	4½"	4.14	3.59
37LH	4½"	4.58	3.98
37aH	4½"	7.28	6.33
38H	4½"	4.65	4.04
38LH	4½"	5.09	4.42
38aH	4¾"	7.28	6.33
39H	6"	5.56	4.83
39LH	6"	6.00	5.22
40H	5"	4.47	3.88
40LH	5"	4.90	4.26
40H	6"	4.87	4.23
40LH	6"	5.31	4.61
41H	6"	5.38	4.67
41LH	6"	5.82	5.06
42H	4½"	4.65	4.04
42LH	4½"	5.09	4.42
43H	4½"	4.6 5	4.04
43LH	4½"	5.09	4.42
44H	4½"	5.05	4.39
44LH	4½"	5.49	4.77
44aH	4½"	5.56	4.83
44aLH	4½"	6.00	5.22
45H	4½"	6.55	5.69
45aH	4½"	8.16	7.09
46H	4½"	6.55	5.69
46aH	4½"	8.16	7.09
47H	4½"	5.67	4.93
47LH	4½"	6.11	5.31
48ESH	7½"	10.69	9.29
49LH	6"	10.07	8.74
50H	6"	4.68	4.07
50LH	6"	5.12	4.45
51H	6"	10.98	9.54
51H	9"	18.30	15.90
52H	4½"	3.55	3.09
52LH	4½"	3.99	3.47
53H	5"	3.92	3.40
53LH	5"	4.36	3.78
54H	5½"	8.31	7.22
54LH	5½"	8.75	7.60
56EH	4¼"	10.17	8.84
56ELH	4¼"	10.61	9.22
57EH	4"	10.17	8.84
57ELH	4"	10.61	9.22
58EH	5"	10.69	9.29
58ELH	5"	11.13	9.67
59EH	5"	9.63	8.36
59ELH	5"	10.07	8.75
60H	7"	4.03	3.50
60H	8"	4.72	4.10
61H	6"	4.50	3.91
61H	7"	4.76	4.13
62H	8¼"	20.06	17.43
63H	8"	20.06	17.43
64EH	4¼"	6.55	5.69
64ELH	4¼"	6.99	6.07
65H	4½"	10.25	8.90
66H	4½"	10.25	8.90
66aH	4½"	10.25	8.90
67H	4½"	11.53	10.02
67aH	4½"	10.80	9.38
67bH	4½"	10.80	9.38

REFERENCE NUMBER	SIZE	1 to 11 PCS. NET	12 to 59 PCS. NET
68H	4½"	11.79	10.24
68bH	4½"	11.79	10.24
69aEH	4½"	10.47	9.10
69aELH	4½"	10.91	9.48
71aEH	4½"	10.47	9.10
71aELH	4½"	10.91	9.48
72SH	7½"	4.61	4.01
73EH	4½"	7.32	6.36
73ELH	4½"	7.76	6.74
74EH	4"	7.43	6.46
74ELH	4"	7.87	6.84
75H	4½"	7.43	6.46
75LH	4½"	7.87	6.84
76EH	4"	5.71	4.96
76ELH	4"	6.15	5.34
77EH	4"	5.49	4.77
77ELH	4"	5.93	5.15
78H	4½"	9.77	8.49
78LH	4½"	10.21	8.87
79EH	4"	5.27	4.58
79ELH	4"	5.71	4.96
80EH	4"	5.27	4.58
80ELH	4"	5.71	4.96
81EH	5½"	7.47	6.49
81ELH	5½"	7.91	6.87
83LH	4¾"	6.95	6.04
84EH	4¾"	4.87	4.23
84ELH	4¾"	5.31	4.61
84ESH	4¾"	5.31	4.61
85EH	4"	4.14	3.59
85ELH	4"	4.58	3.98
86EH	4¾"	4.98	4.33
86ELH	4¾"	5.42	4.71
86LH	5"	5.56	4.83
86LH	6"	5.89	5.12
87EH	4½"	4.98	4.33
87EH	7"	6.22	5.41
87aEH	7"	7.98	6.93
89LH	4¾"	5.09	4.42
89LH	6"	5.82	5.06
90EH	4¾"	9.52	8.27
90ELH	4¾"	9.96	8.65
92EH	4"	4.83	4.20
92ELH	4"	5.27	4.58
92ESH	4"	5.27	4.58
92aEH	4"	5.31	4.61
92aELH	4"	5.75	4.99
93H	4½"	7.36	6.39
93LH	4½"	7.80	6.77
94LH	4½"	7.87	6.84
95EH	4"	4.65	4.04
95ELH	4"	5.09	4.42
95ESH	4"	5.09	4.42
95aEH	4"	5.05	4.39
95aELH	4"	5.49	4.77
96H	4½"	4.21	3.66
96LH	4½"	4.65	4.04
96H	5"	4.28	3.72
96LH	5"	4.72	4.10
96H	6"	4.54	3.94
96LH	6"	4.98	4.33
96H	7"	4.83	4.20
96LH	7"	5.27	4.58
97EH	4"	3.92	3.40
97ELH	4"	4.36	3.78
97ESH	4"	4.36	3.78
98ELH	6"	6.33	5.50
98ESH	6"		
99EH	4"	4.47	3.88
99ELH	4"	4.90	4.26
99ESH	4"	4.90	4.26
101H	4½"	7.54	6.55
101LH	4½"	7.98	6.93
102H	4½"	7.54	6.55
102LH	4½"	7.98	6.93
103H	4½"	7.54	6.55
103LH	4½"	7.98	6.93
104H	4½"	7.54	6.55
104LH	4½"	7.98	6.93
105H	4½"	7.54	6.55
105LH	4½"	7.98	6.93
106H	4½"	7.54	6.55
106LH	4½"	7.98	6.93
107H	4½"	7.54	6.55
107LH	4½"	7.98	6.93
108H	4½"	7.54	6.55
108LH	4½"	7.98	6.93
109H	4½"	8.27	7.19
109LH	4½"	8.71	7.57
110H	4½"	8.27	7.19

Quotations on quantities greater than those listed are available—Call or write TECHNI-TOOL—Large blanket orders welcome—Ask for bulletin on production delivery schedules.

ALL PRICES SUBJECT TO CHANGE F.O.B. PHILADELPHIA

PRICE LISTS

PLIERS & CUTTERS Continued

REFERENCE NUMBER	SIZE	1 to 11 PCS. NET	12 to 59 PCS. NET
110LH	4½"	8.71	7.57
111H	4½"	8.27	7.19
111LH	4½"	8.71	7.57
114H	4½"	10.47	9.10
114LH	4½"	10.91	9.48
115H	4½"	10.47	9.10
115LH	4½"	10.91	9.48
116H	4½"	11.93	10.37
116LH	4½"	12.37	10.75
117H	4½"	10.47	9.10
117LH	4½"	10.91	9.48
118H	4½"	11.93	10.37
118LH	4½"	12.37	10.75
119H	4½"	11.93	10.37
119LH	4½"	12.37	10.75
120H	4½"	14.86	12.91
120LH	4½"	15.30	13.29
121LH	4¼"	12.85	11.16
122LH	4½"	12.04	10.46
123LH	4½"	12.04	10.46
124EH	5¾"	8.71	7.57
124ELH	5¾"	9.15	7.95
125EH	6"	10.43	9.06
125ELH	6"	10.87	9.45
126EH	5½"	9.63	8.36
126ELH	5½"	10.07	8.75
127H	6¼"	6.41	5.57
127LH	6¼"	6.84	5.95
128H	5¾"	6.41	5.57
128LH	5¾"	6.84	5.95
129ESH	8"	12.81	11.13
130H	6"	7.21	6.27
130LH	6"	7.65	6.65
131H	4¾"	6.26	5.44
131LH	4¾"	6.70	5.82
140H	5½"	4.65	4.04
140LH	5½"	5.09	4.42
179H	4½"	21.50	20.50
180H	4½"	21.50	20.50
181H	4½"	22.50	22.50
197H	4"	22.50	22.50
198H	4"	21.50	20.50
199H	4"	21.50	20.50
239aSH	4¾"	5.09	4.42

EREM TWEEZERS

REFERENCE NUMBER	SIZE	1 to 11 PCS. NET	12 to 59 PCS. NET
A	4½"	3.29	2.86
AA	4¾"	1.32	1.14
AA-CA	4¾"	3.62	3.15
AA-SA	4¾"	2.20	1.91
AC	4¼"	3.29	2.86
AM	4½"	2.16	1.88
BB	4½"	1.13	.99
D	3¾"	3.62	3.15
GG	5"	1.61	1.40
H	3¼"	2.85	2.48
HH	4½"	1.39	1.21
LL	4½"	1.54	1.34
MM	4¾"	1.39	1.21
NN	4½"	1.39	1.21
O	4½"	3.07	2.67
OA	4½"	3.51	3.05
OC	3½"	2.34	2.04
OC-SA	3½"	3.81	3.31
OO(BOL)	4½"	1.54	1.34
OO(DUM)	4½"	3.07	2.67
OOD	4½"	3.29	2.86
OO-SA	4½"	4.10	3.56
OOC	4¼"	3.07	2.67
OOO	4½"	3.59	3.12
P	5"	2.45	2.13
P-S	5"	2.89	2.51
PP	4¼"	1.68	1.46
QQ	4¼"	1.24	1.08
RR	5½"	2.64	2.29
S	5"	1.98	1.72
S-S	5"	2.42	2.10
T	4½"	2.34	2.04
VL	4¼"	2.20	1.91
ZA	4½"	2.27	1.97
ZA-S	4½"	2.42	2.10
ZB	4½"	2.12	1.84
ZB-S	4½"	2.42	2.10
M-AA	2½"	2.12	1.84
M-AC	3¼"	2.85	2.48
M-HD	3"	2.85	2.48
M-OOD	3¼"	2.85	2.48
M-2a-SA	3¼"	3.15	2.73
M-3-S	2¾"	3.29	2.86
M-3c-S	2¾"	3.29	2.86
M-4-S	2¾"	3.48	3.02
M-4a-S	3½"	3.48	3.02
M-5-S	3¼"	3.48	3.02
1	4½"	2.93	2.54

EREM TWEEZERS Continued

REFERENCE NUMBER	SIZE	1 to 11 PCS. NET	12 to 59 PCS. NET
2	4½"	3.11	2.70
2-S	4½"	3.59	3.12
2-SA	4½"	3.88	3.37
2a	4½"	3.22	2.80
2a-CA	4½"	5.53	4.80
2a-S	4½"	3.59	3.12
2a-SA	4½"	4.10	3.56
2a-SAEF	4½"	5.53	4.80
2ab	4½"	4.98	4.32
2ac	4½"	3.95	3.43
3	4½"	3.11	2.70
3-M3	4½"	3.81	3.31
3-S	4½"	3.51	3.05
3-SA	4½"	3.88	3.37
3c	4¼"	2.85	2.48
3c-CA	4¼"	5.31	4.61
3c-ME	4¼"	3.11	2.70
3c-M3	4¼"	3.81	3.31
3c-N	4¼"	3.29	2.86
3c-S	4¼"	3.22	2.80
3c-SA	4¼"	3.88	3.37
3c-SME	4¼"	4.03	3.50
3cb-S	4¼"	3.51	3.05
4	4½"	3.29	2.86
4-S	4½"	3.59	3.12
4-SA	4½"	4.17	3.63
5	4½"	3.81	3.31
5-M3	4½"	4.54	3.94
5-S	4½"	4.17	3.63
5-SA	4½"	4.54	3.94
5a	4½"	4.32	3.75
5a-S	4½"	4.83	4.20
5b	4½"	3.59	3.12
5c-S	4½"	4.32	3.75
6	4½"	4.32	3.75
6-S	4½"	4.83	4.20
6-SA	4½"	5.05	4.39
7	4½"	3.95	3.43
7-CA	4½"	6.19	5.37
7-ME	4½"	4.14	3.59
7-M3	4½"	5.05	4.39
7-S	4½"	4.61	4.01
7-SA	4½"	4.76	4.13
7-TA	4½"	9.11	7.92
7a	4½"	3.95	3.43
7a-S	4½"	4.61	4.01
7b	4½"	3.95	3.43
7b-S	4½"	4.61	4.01
7c	4¼"	3.95	3.43
7c-S	4¼"	4.61	4.01
8	4½"	4.03	3.50
10/0	4½"	9.15	7.95
10/00	4½"	9.15	7.95
10/1	4½"	9.15	7.95
10/2	4½"	9.15	7.95
10/3	4½"	9.15	7.95
11	4½"	2.93	2.54
12	4½"	3.22	2.80
12a-SA	4¾"	4.36	3.78
13	5½"	4.32	3.75
14a	4½"	7.25	6.30
14an	4½"	6.51	5.66
14c	4½"	5.78	5.02
15	4½"	5.05	4.39
15a-GW	4½"	7.25	6.30
15a-SW	4½"	7.25	6.30
15a-NW	4½"	7.25	6.30
15a-FW	4½"	7.25	6.30
15a-PTS	4½"	18.15	15.77
15ac	4½"	7.25	6.30
16	4½"	4.03	3.50
17	4½"	4.03	3.50
18	4½"	4.03	3.50
18-SA	4½"		
19	6½"	2.93	2.54
20	5½"	2.85	2.48
21	6½"	2.93	2.54
21	8"	5.78	5.02
22	6"	3.59	3.12
23	6"	4.61	4.01
24	6"	3.59	3.12
24	8"	5.78	5.02
24-SA	6"	5.05	4.39
25	4¾"	2.20	1.91
26	4½"	2.34	2.04
27	4¼"	2.49	2.16
28	4¼"	2.56	2.23
29	6"	3.95	3.43
30	6"	4.32	3.75
31	4½"	2.56	2.23
32	6"	2.34	2.04
33	6"	2.20	1.91
34	6"	2.34	2.04
35	4¾"	2.56	2.23
35a-SA	4¾"	3.59	3.12
36	4¾"	2.85	2.48

EREM TWEEZERS Continued

REFERENCE NUMBER	SIZE	1 to 11 PCS. NET	12 to 59 PCS. NET
36-SA	4¾"	3.59	3.12
37	5½"	3.59	3.12
38	4½"	5.05	4.39
39	4½"	5.05	4.39
40	4½"	5.05	4.39
41	4½"	6.51	5.66
42	4¾"	3.59	3.12
44	4¾"	7.25	6.30
45	4¾"	7.25	6.30
46	4¾"	7.25	6.30
47	4¾"	7.25	6.30
50-S	5½"	4.32	3.75
51-S	4½"	4.32	3.75
52a-SA	4½"	4.94	4.29
53	4½"	4.03	3.50
53c-SA	4¼"	4.58	3.98
54	4½"	4.03	3.50
55	4½"	4.03	3.50
56	4½"	4.03	3.50
57	4½"	4.03	3.50
58	4½"	4.03	3.50
59	4½"	4.03	3.50
60-S	5½"	4.32	3.75
62	4½"	4.03	3.50
62a-C	4¼"	6.41	5.57
62a-SA	4¼"	6.41	5.57
64	4½"	4.03	3.50
65a-S	4½"	4.32	3.75
66-S	4½"	5.05	4.39
72a-SA	4½"	6.41	5.57
72ac	4½"	6.41	5.57
77/16 to 30	2½"	2.89	2.51
77/00	2½"	2.56	2.23
85a-SA	4¾"	6.41	5.57
85b-SA	4¾"	7.87	6.84
85c-SA	4¾"	7.14	6.20
85d-SA	4¾"	7.87	6.84
85e-SA	4¾"	7.87	6.84
86a-SA	4¾"	6.41	5.57
86b-SA	4¾"	7.14	6.20
87b-SA	4¾"	7.14	6.20
88/16 to 30	2½"	4.36	3.78
95a-SA	4¾"	7.87	6.84
99	4¾"	7.25	6.30

PRECISTA SCISSORS & MISC

REFERENCE NUMBER	SIZE	1 to 11 PCS. NET	12 to 59 PCS. NET
T-2	7"	11.70	11.20
T-2-1	1"	1.40	1.31
20a-S	4½"	2.31	2.00
24a-S	4½"	2.31	2.00
24-S	6"	3.22	2.80
35	5"	4.39	3.82
35PH	5"	4.87	4.23
36	5"	4.39	3.82
36PH	5"	4.87	4.23
37	6"	4.39	3.82
37PH	6"	4.87	4.23
38	6"	4.39	3.82
38PH	6"	4.87	4.23
175	5"	4.03	3.50
175a	5"	5.23	4.55
175/3 to 7	1½"	.26	.22
176	5"	1.76	1.53
176a	5"	2.25	1.95
176/20 to 24	1½"	.12	.10
177	5"	1.76	1.53
177a	5"	2.34	2.04
177/10 to 15	1½"	.12	.10
178	3¾"	3.84	3.34
179	4"	4.03	3.50
180	4¼"	4.21	3.66
181	4"	14.27	12.40
182	5½"	1.83	1.59
183	6"	1.83	1.59
184	2¾"-4½"	12.41	10.78
184a	2¾"	1.90	1.65
184b	3½"	1.98	1.72
184c	4"	2.05	1.78
184d	4½"	2.12	1.84
185	3"	5.82	5.06
186	4"	6.55	5.69
187	10"	2.16	1.88
189	10"	2.16	1.88
190	10"	2.16	1.88
191	11"	.44	.38
192	11"	.44	.38
193	11"	.44	.38
194	11"	.44	.38
195	11"	.44	.38
196	11"	.44	.38
197	3½"-4¼"	13.87	12.05
198	½"	2.89	2.51
198a	1"	3.62	3.15
199	7"	1.10	.95

PRICE LISTS

PRECISTA SCISSORS & MISCELLANEOUS Continued

REFERENCE NUMBER	SIZE	1 to 11 PCS. NET	12 to 59 PCS. NET
200	3"	1.83	1.59
201	3½"	1.83	1.59
202	4"	1.83	1.59
203	4½"	2.38	2.07
204	3½"	6.55	5.69
205	3"	4.35	3.78
205a	3½"	5.09	4.42
205b	3½"	5.09	4.42
206a	2X	6.95	6.04
206b	2½X	6.95	6.04
206c	3X	6.95	6.04
206d	4X	6.95	6.04
207a	3X	2.01	1.75
207b	3½X	2.16	1.88
207c	4X	2.38	2.07
207d	5X	2.56	2.23
207e	7X	2.75	2.39
207f	10X	2.89	2.51
208	7X-10X	3.11	2.70
209	10X-20X	4.03	3.50
209a	4X-7X	3.48	3.02
210	3½"	9.48	8.24
211	4"	2.38	2.07
211a	4"	2.82	2.45
212	4"	2.60	2.26
213	4¾"	2.64	2.29
213a	4¾"	2.82	2.45
214	4¾"	2.64	2.29
215	—	13.14	11.42
216	—	13.14	11.42
217	3½"	2.89	2.51
217a	3½"	1.83	1.59
218	4"	5.82	5.06
219	4"	5.82	5.06
220	5"	2.38	2.07
221	7"	2.45	2.13
221PH	7"	2.93	2.54
222	7"	2.60	2.26
222PH	7"	3.07	2.67
223	4½"	3.62	3.15
224	6"	4.35	3.78
225	6¼"	5.82	5.06
226	3½"	1.43	1.24
226	4"	1.65	1.43
227	3½"	1.28	1.11
227	4"	1.43	1.24
228a	5½"	6.95	6.04
228b	5½"	6.95	6.04
228c	5"	16.47	14.31
228d	6½"	24.52	21.31
229	5½"	13.54	11.77
229b	3"	8.41	7.31
238	3¼"	11.50	11.50
239	4"	16.50	16.50
240	4"	21.50	21.50
241	4½"	4.95	4.95
242	4½"	6.95	6.95
243	5"	22.95	22.95
244	5"	19.95	19.95
245	5"	25.95	25.95
246	2X	10.00	10.00
247	2½X	10.00	10.00
248	3X	10.00	10.00
249	2X	2.25	2.25
250	3½X	2.50	2.50
251	4X	2.75	2.75
252	8X-15X	7.50	7.50
253	10X-20X	7.90	7.90
254	4X	4.75	4.75
255	6X	4.75	4.75
256	10X	5.25	5.25
257	12X	5.50	5.50
258	15X	5.75	5.75
259	20X	5.95	5.95
260a	2½"	.44	.38
260b	2½"	.44	.38
260c	2½"	.44	.38
260d	2½"	.44	.38
262	4¾"	3.62	3.15
263	6X	9.50	9.50
264	12X	6.00	6.00
265	4¾"	2.89	2.51
265a	1½"	.70	.60
266	4¾"	2.89	2.51
266a	1½"	.70	.60
267	4¾"	2.89	2.51
267a	1½"	.70	.60
268	4¾"	2.89	2.51
268a	1½"	.70	.60
269	6"	2.89	2.51
270	4½"	2.60	2.26
271	4¾"	2.60	2.26
272	4¾"	2.60	2.26
273	4½"	2.60	2.26
275	5¼"	3.29	2.86
275PH	5¼"	3.77	3.28
275a	6"	3.48	3.02
275aPH	6"	3.95	3.43
276	4½"	2.60	2.26
276PH	4½"	3.07	2.67
276a	4½"	2.82	2.45
276aPH	4½"	3.29	2.86
277	4¾"	2.60	2.26
277PH	4¾"	3.07	2.67
278	4¾"	3.95	3.43
278PH	4¾"	4.43	3.85
279	4¾"	3.95	3.43
279PH	4¾"	4.43	3.85
280	4¾"	3.95	3.43
280PH	4¾"	4.43	3.85
281	4¾"	3.95	3.43
281PH	4¾"	4.43	3.85
282	4¾"	3.95	3.43
282PH	4¾"	4.43	3.85
283	5"	3.95	3.43
283PH	5"	4.43	3.85
284	5"	3.95	3.43
284PH	5"	4.43	3.85
285	5"	3.95	3.43
285PH	5"	4.43	3.85
286	5"	3.95	3.43
286PH	5"	4.43	3.85
287	5"	3.95	3.43
287PH	5"	4.43	3.85
288	3¼"	2.49	2.16
289	3¼"	2.49	2.16
290	3¾"	2.27	1.97
291	3¾"	2.27	1.97
292	3½"	2.27	1.97
293	3½"	2.27	1.97
294	3½"	2.27	1.97
295	4"	2.49	2.16
296	3½"	2.31	2.00
297	3½"	2.09	1.81
298	4"	2.16	1.88
298a	4½"	2.38	2.07
298b	5"	2.56	2.23
299	5"	2.64	2.29
300(Tw)	4½"	.81	.70
300(Sc)	5"	9.63	8.36
300PH	5"	10.10	8.78
301	7"	13.03	11.32
301PH	7"	13.51	11.73
301a	8"	13.83	12.02
301aPH	8"	14.31	12.43
301b	8"	15.81	13.74
301bPH	8"	16.29	14.15
302	4"	2.93	2.54
302PH	4"	3.40	2.96
303	4½"	2.93	2.54
303PH	4½"	3.40	2.96
304	5"	3.26	2.83
305	5"	2.60	2.26
306	4½"	12.33	10.72
307	4½"	2.60	2.26
308	5"	3.66	3.18
309	4"	2.38	2.07
310	6½"	2.64	2.29
310PH	6½"	3.11	2.70
311	5"	2.49	2.16
311PH	5"	2.97	2.58
312	5"	2.60	2.26
312PH	5"	3.07	2.67
313	6¼"	3.48	3.02
314	6¾"	3.48	3.02
315	7"	3.48	3.02
316	7"	3.48	3.02
317	6½"	3.00	2.61
317PH	6½"	3.48	3.02
318	6½"	3.00	2.61
318PH	6½"	3.48	3.02
319	6"	2.97	2.58
319PH	6"	3.44	2.99
320	5"	2.82	2.45
320PH	5"	3.29	2.86
323	6"	3.40	2.96
323PH	6"	3.88	3.37
323a	8"	4.61	4.01
323aPH	8"	5.09	4.42
324	5"	10.25	8.90
324PH	5"	10.72	9.32
324a	7"	11.64	10.11
324aPH	7"	12.12	10.53
324b	8"	12.30	10.69
324bPH	8"	12.77	11.10
324c	10"	15.45	13.42
324cPH	10"	15.92	13.83
325	5½"	2.60	2.26
326	5½"	2.60	2.26
327	5½"	2.60	2.26
328	4"	2.49	2.16
329	4¼"	2.49	2.16
330	4½"	2.60	2.26
331	5½"	2.49	2.16
331a	6"	2.60	2.26
331b	7¾"	3.26	2.83
332	3½"	2.12	1.84
333	3½"	2.12	1.84
334	3½"	2.12	1.84
335	3½"	2.12	1.84
336	4"	2.27	1.97
337	4"	2.27	1.97
338	5"	2.27	1.97
339	6"	3.26	2.83
340	7"	3.47	3.02
341	8"	3.84	3.34
342	6¾"	2.31	2.00
343	7"	2.31	2.00
344	6½"	2.31	2.00
345	8½"	1.68	1.46
346	4½"	10.14	8.81
346a	5½"	14.13	12.28
347	6"	2.34	2.04
348	6"	2.34	2.04
349	6¼"	3.70	3.21
349PH	6¼"	4.17	3.63
350	6½"	7.58	6.58
350PH	6½"	8.05	7.00
351	6½"	7.58	6.58
351PH	6½"	8.05	7.00
352	6½"	7.58	6.58
352PH	6½"	8.05	7.00
360	6"	4.80	4.17
360PH	6"	5.27	4.58
361	6"	4.80	4.17
361PH	6"	5.27	4.58
362	6"	4.80	4.17
362PH	6"	5.27	4.58
363	6"	4.80	4.17
363PH	6"	5.27	4.58
364	6"	4.80	4.17
364PH	6"	5.27	4.58
365	6"	4.36	3.78
365PH	6"	4.83	4.20
400	4½"	.81	.70
475	5¾"	2.89	2.51
475a	4½"	2.89	2.51
475b	4½"	2.89	2.51
475c	4½"	2.89	2.51
478	7"	13.14	11.42
478a	5½"	7.28	6.33
504	7"	5.82	5.06
505	6"	5.09	4.42
505a	7"	5.49	4.77
506	6"	5.82	5.06
507-4/0	5¼"	.37	.32
507-3/0	5¼"	.37	.32
507-2/0	5¼"	.37	.32
507-0	5¼"	.37	.32
507-1	5¼"	.37	.32
507-2	5¼"	.37	.32
507-3	5¼"	.37	.32
507-4	5¼"	.37	.32

EREM DISCOUNT SCHEDULE

See published prices above*
Quantities of 60 pieces or more will be quoted by phone or written confirmation. Check our prices against the competition.

EREM Specials are quoted on a time and materials basis only—at the single piece price.

Teflon coating — minimum 6 pieces
1½ mil — 1.85 ea. additional
3 mil — 3.50 ea. additional

Tweezers are available in titanium, nickel, carpenter - 20, & special coatings. Write for bulletin.

Reconditioning Service available for tweezers — write for bulletin.

All prices are subject to change without notice F.O.B. Phila. — Billings will be made at the prevailing prices — unless written exception from Techni—Tool is granted.

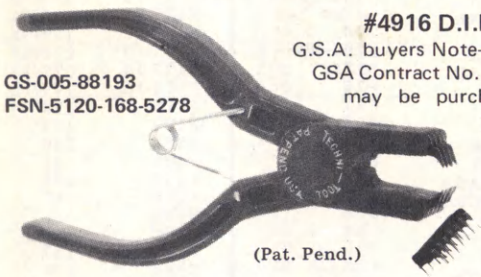
CROSS REFERENCE HUNTER - EREM

HUNTER	EREM
A1L	1LH
A2	2H
A2L	2LH
A4	4H
A4L	4LH
A5	5H
A5L	5LH
A7L	7LH
A8	8H
A8L	8LH
A11	11H
A11L	11LH
A11S	11SH
A11D	11dH
A11DL	11dLH
A12	12H
A12L	12LH
A12S	12SH
A13	13H
A13L	13LH
A13BE	13bEH
A13BEL	13bELH
A13C	13cH
A13CL	13cLH
A13DE	13dEH
A13DEL	13dELH
A14-4½"	14H-4½"
A14L-4½"	14LH-4½"
A14-6"	14H-6"
A14L-6"	14LH-6"
A14A	14aH
A14AL	14aLH
A14B	14bH
A14BL	14bLH
A14CS	14cSH
A14DS	14dSH
A15A	15aH-4½"
A14AL	15aLH-4½"
A15B	15bH
A15BL	15bLH
A16A	16aH-4½"
A16AL	16aLH-4½"
A17A	17aH-4½"
A17AL	17aLH-4½"
A17AS	17aSH-4½"
A20-4½"	20H-4½"
A201-4½"	20LH-4½"
A20-5	20H-5"
A20L-5"	20LH-5"
A20-6"	20H-6"
A20L-6"	20LH-6"
A21S	21SH
A22S	22SH
A23S	23SH
A24S	24SH
A255	25SH
A25As	25ASH
A27S	27SH
A29	29H
A29L	29LH
A30E	30H
A30EL	30LH
A35E	35ELH
A35ELH	35ELH
A36	36H
A36L	36LH
A36A	36AH
A37	37H
A37L	37LH
A37A	37AH
A38	38H
A38L	38LH
A38A	38aH
A39	39H
A39L	39LH
A41	41H
A41L	41LH
A42	42H
A42L	42LH
A43	43H
A43L	43LH
A44	44H
A44L	44LH
A44A	44aH
A44AL	44a1H
A45	45H
A45L	45LH
A46	46H
A46L	—
A47	47H
A47L	47LH
A48ES	48ESH
A49L	49LH
A51-6½"	51H-6"
A51-9"	51H-9"
A52	52H
A52L	52LH
A53	53H
A53L	53LH
A54	54H
A54L	54LH
A56E	56EH
A56EL	56ELH
A57E	57EH
A57EL	57ELH
A58E	58EH
A58EL	58ELH
A59E	59E
A59EL	59ELH
A60-7"	60H-7"
A60-8"	60H-8"
A61-6"	61H-6"
A61L-6"	—
A61-7"	61H-7"
A61L-7"	—
A64E	64EH
A64EL	64ELH
A65	65H
A66	66H
A67	67H
A67B	67BH
A68	68H
A68B	68bH
A69AE	69aEH
A69AEL	69aELH
A71AE	71aEH
A71AEL	71aELH
A73E	73EH
A73EL	73ELH
A74E	74EH
A74EL	74ELH
A76E	76EH
A76EL	76ELH
A77E	77EH
A77EL	77ELH
A78	78H
A78L	78LH
A79E	79EH
A79EL	79ELH
A80E	80EH
A80EL	80ELH
A81E	81EH
A81EL	81ELH
A83L	83LH
A84EL	84ELH
A86E	86EH
A86EL	86ELH
A86L-5"	86LH-5"
A86L-6"	86LH-6"
A87E	87EH
A89L-4¾"	89LH-4¾"
A89L-6"	89LH-6"
A90E	90EH
A90EL	90ELH
A92AE	92aEH
A92AEL	92aELH
A92E	92EH
A92EL	92ELH
A94L	94LH
A95AE	95aEH
A95AEL	95aELH
A95E	95EH
A95EL	95ELH
A96-4¾"	96H-4½"
A96L-4¾"	96LH-4½"
A96-5	96H-5"
A96L-5	96LH-5"
A96-6	96H-6"
A96L-6	96LH-6"
A97B	Discontinued
A97BS	Discontinued
A97E	97EH
A97ES	97ESH
A97EL	97ELH
A98L	98LH
A98EL	98ELH
A99E	99EH
A99EL	99ELH
A99ES	99ESH
A101	101H
A101L	101LH
A102	102H
A102L	102LH
A103	103H
A103L	103LH
A104	104H
A104L	104LH
A105	105H
A105L	105LH
A106	106H
A106L	106LH
A107	107H
A107L	107LH
A108	108H
A108L	108LH
A109	109H
A109L	109LH
A110	110H
A110L	110LH
A111	111H
A111L	111LH
A114E	114EH
A114EL	114ELH
A115E	115EH
A115EL	115ELH
A116E	116EH
A116EL	116ELH
A117E	117EH
A117EL	117ELH
A118E	118EH
A118EL	118ELH
A119E	119EH
A119EL	119ELH
A120E	120EH
A120EL	120ELH
A124E	124EH
A124EL	124ELH
A125E	125EH
A125EL	125ELH
A126E	126EH
A126EL	126ELH
A127	137H
A127L	127LH
A128	128H
A128L	128LH
A129ES	129ESH
A130	130H
A130L	130LH
A131	131H
A131L	131LH
A140	140H
A140L	140LH
A197	197H
A198	198H
A199	199H
A239A-S	239aSH
B-A	A
B-AC	AC
B-AM	AM
B-D	D
B-H	H
B-P	P
B-PS	P-S
B-S	S
B-SS	S-S
B-ZA	ZA
B-ZAS	ZA-S
B-ZB	ZB
B-ZBS	ZB-S
B-OA	OA
B-OC	OC
B-OCSA	OC-SA
B-OOC	OOC
B-OOO	OCD
B-OOO	OOO
B-OO	OO (Dumont)
B-OOSA	OO-SA
B-O	O
B-1	1
B-2	2
B-2S	2-S
B-25A	2-SA
B-2A	2a
B-2AB	2ab
B-2ASA	2a-SA
B-ZAC	2ac
B-2ACA	2a-CA
B-3	3
B-3S	3-S
B-3SA	3-SA
B-3M3	3-M3
B-3C	3C
B-3CBS	3Cb-S
B-3CN	3C-N
B-3CS	3C-S
B-3CSA	3c-SA
B-3CCA	3c-CA
B-3CM3	3c-M3
B-4	4
B-45	4-S
B-45A	4-SA
B-4CA	4-CA
B-5	5
B-5A	5a
B-5B	5b
B-5M3	5M3
B-5S	5-S
B-55A	5-SA
B-5CA	5-CA
B-5CS	5c-S
B-6	6
B-6S	6-S
B-6SA	6-SA
B-7	7
B-7S	7-S
B-7SA	7-SA
B-7A	7a
B-7AS	7a-S
B-7B	7b
B-7BS	7b-S
B-7C	7c
B-7CS	7c-S
B-7M3	7-M3
B-8	8
B-11	11
B-12	12
B-13	13
B-14A	14a
B-14AN	14an
B-15	15
B-15A	15a-GW
B-15AC	15ac
B-16	16
B-17	17
B-18	18
B-50S	50-S
B-51S	51-S
B-52ASA	52a-SA
B-53CSA	53c-SA
B-56	56
B-57	57
B-58	58
B-62AC	62A-C
B-62ASA	62a-SA
B-65AS	65a-S
B-66S	66-S
B-72AC	72AC
B-72ASA	72a-SA
B-85ASA	85a-SA
B-85BSA	85b-SA
B-85CSA	85c-SA
B-86ASA	86a-SA
B-86BSA	86b-SA
B-87BSA	87b-SA
B-95ASA	95a-SA
C-AA	AA
C-AASA	AA-SA
C-AACA	AA-CA
C-BB	BB
C-GG	GG
C-HH	HH
C-LL	LL
C-MM	MM
C-NN	NN
C-OO	OO (Boley)
C-PP	PP
C-QQ	QQ
C-RR	RR
C-T	T
C-VL	VL
C-19	19
C-20	20
C-20S	20a-S
C-21-6¼"	21-6½"
C-21-8"	21-8"
C-24S-4½"	24aS-4½"
C-24S-6"	24S-6"
C-24SA	24-SA
C-25	25
C-26	26
C-27	27
C-28	28
C-29	29
C-30	30
C-31	31
C-35	35
C-35ASA	35a-SA
C-36	36
C-36ASA	36-SA
C-37	37
C-38	38
C-39	39
C-40	40
C-41	41
C-44	44
C-45	45
C-46	46
C-47	47
C77/00	77/00
C77/AWG-16	77/16
C77/AWG-18	77/18
C77/AWG-20	77/20
C77/AWG-22	77/22
C77/AWG-24	77/24
C77/AWG-26	77/26
C77/AWG-28	77/28
C77/AWG-30	77/30
C-88/AWG-16	88/16
C-88/AWG-18	88/18
C-88/AWG-20	88/20
C-88/AWG-22	88/22
C-88/AWG-24	88/24
C-88/AWG-26	88/26
C-88/AWG-28	88/28
C-88/AWG-30	88/30
F35	35PH
F35	36PH
F37	37PH
F38	38PH
F176	176
F176-20	176/20
F176-21	176/21
F176-22	176/22
F176-23	176/23
F176-24	176/24
F177	177
F177A	177A
F177-10	177/10
F177-11	177/11
F177-12	177/12
F177-13	177/13
F177-14	177/14
F177-15	177/15
F178	178
F179	179
F180	180
F181	181
F182	182
F183	183
F184	184
F185	185
F187	187
F189	189
F190	190
F-204	204
F205	205
F207A	207a
F207D	207d
F207F	207f
F210	210
F211	211
F212	212
F213	213
F213A	213a
F214	214
F217	217
F219	219
F220	220
F221	221PH
F222	222PH
F223	223
F226	226-3½"
F227	227-3½"
F228A	228a
F228B	228b
F229B	229b
F241	241
F260A	260a
F260B	260b
F260C	260c
F260D	260d
F262	262
F265	265
F265A	265a
F266	266
F266A	266a
F267	267
F267A	267a
F268	268
F268A	268a
F270	270
F271	271
F272	272
F273	273
F274	274
F275	275PH
F278	278PH
F279	279PH
F280	280PH
F281	281PH
F282	282PH
F283	283PH
F284	284PH
F285	285PH
F286	286PH
F287	287PH
F288	288
F289	289
F290	290
F291	291
F292	292
F293	293
F294	294
F295	295
F296	296
F297	297
F298	298
F299	299
F300	300
F301	301
F302	302
F303	303
F304	304
F305	305
F306	306
F307	307
F308	308
FT-2	T2
FT2-1	T2-1

TECHNI-TOOL, INC.

1216 ARCH STREET, PHILADELPHIA, PENNSYLVANIA • ZIP CODE: 19107

AREA CODE (215) 568-4457 - 58, 4482 - 83 ● SPECIALISTS IN TOOLS FOR INTEGRATED CIRCUITRY



GS-005-88193
FSN-5120-168-5278

#4916 D.I.P. EXTRACTOR

G.S.A. buyers Note—this item is under GSA Contract No. GS-005-88193 and may be purchased at a special price—please write for your GSA contract copy.

$9.95 ea. (1-24)
8.95 ea. (25+)

(Pat. Pend.)

•Removes 10 - 14 - 16 or 24 lead D.I.P.'s •Self retaining action, self closing •Metal teeth help sink heat away from the leads •Won't marr board or bend leads •Insulated for "Live board" work •Molded of A.B.S. •Effective in close areas of large scale integration •D.I.P. does not pop free, but is lifted in a plane perpendicular to the circuit board •Handle end is designed for lead straightening •A universal component removal tool—good for TO-5 style cans, carbon stack resistors, etc:

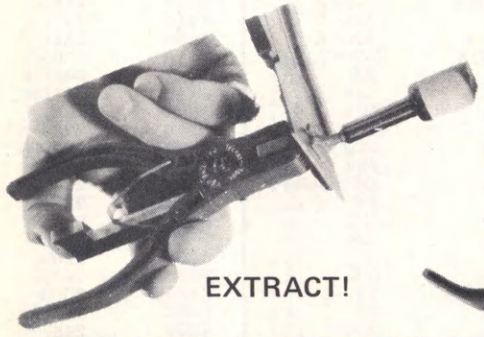
#4916A INSERTER EXTRACTOR FOR D.I.P.'S

$12.95 ea. (1-24)
11.95 ea. (25+)

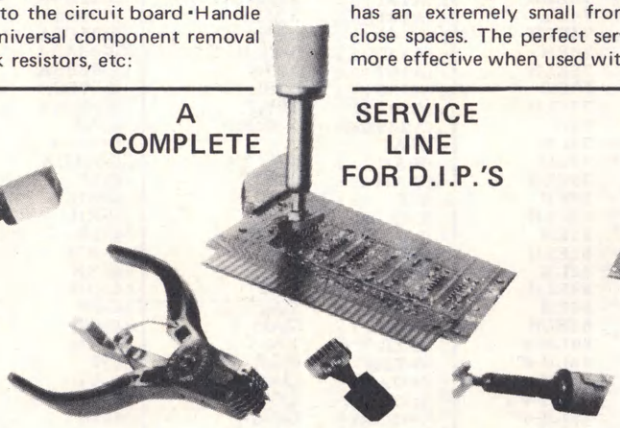
(Pat. Pend.)

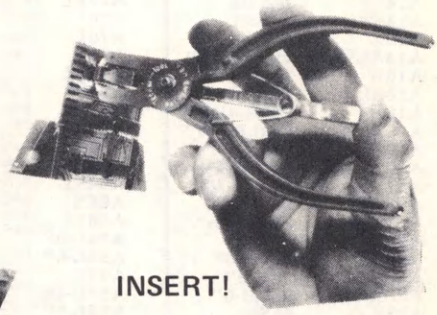
Now—a second generation service tool that does the job as no other before. The 4916A can be used to insert and extract DIP'S from P.C. boards and sockets. Designed so you can see every lead as you insert the package. Spring loaded for speed and component retention. The 4916A has an extremely small frontal working area—to get your DIP's into close spaces. The perfect service tool for field work. (The tool is even more effective when used with our DIP Soldering-De-Soldering tips.)

A COMPLETE SERVICE LINE FOR D.I.P.'S

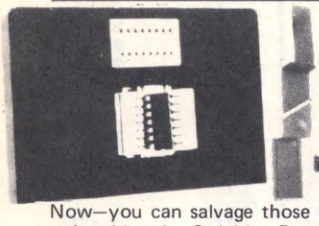


EXTRACT!





INSERT!

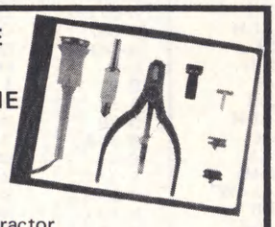


#4929 D.I.P. LEAD STRAIGHTENER

(Pat. Pend.)

Now—you can salvage those DIP's with bent or twisted Leads—Quickly—Precisely.
This unit consists of a pickup—inserter that adjust the outward spring of the leads. The vertical straightener consists of a set of precision jaws and a lead follower. —In addition—we have provided an ultra-Precise Alignment Block-for the critical alignment of the DIP leads. The unit pays for itself in less than a week.
$75.00 ea. Quantity Disc. Ask for quotations.

#4930 COMPLETE SERVICE KIT FOR DUAL INLINE PACKAGES



(Pat. Pend.)

Contents:
#4916A—Inserter Extractor
#4917—Heat Sink
#4918—D.I.P. Desoldering Tip
#4919—Lead Lifter
#4922A—Aperture Cleaner
Soldering Iron & Element
#4930—Complete Service Kit — $39.95
#4930A—Complete Service Kit with additional #4929 Lead Straightener — $99.95

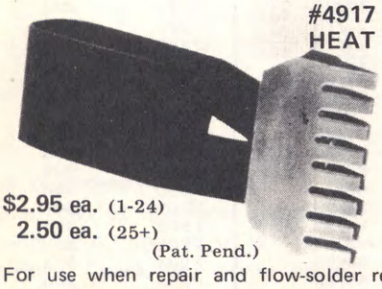
#4918 D.I.P. DeSoldering Tip

$4.50 ea. (1-24)
3.50 ea. (25+)

(Pat. Pend.)

#4918 Tip expressly designed for soldering and DeSoldering of DIP's. Ventilated grooves melt the solder without De-laminating the board. The grooves wick the solder by capillary action. The pointed ends of the tips are used for Re-soldering the leads and use in conjuction with the #4916 extractor.
—Shaft Diam. 3/16"—use with 45 watt iron.
Accomodate 14 or 16 pin units.

#4917 D.I.P. HEAT SINK

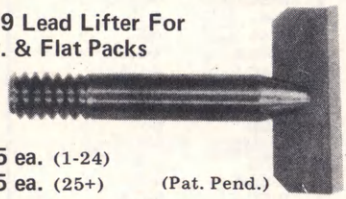


$2.95 ea. (1-24)
2.50 ea. (25+)

(Pat. Pend.)

For use when repair and flow-solder replacement of D.I.P.'s occurs. A superb Heat Sink that is easily placed on a 14 or 16 lead D.I.P. Self closing action and ventilated lead grips make the Heat Sink quick and safe to use. Beryllium Copper construction insures long life.

#4919 Lead Lifter For D.I.P. & Flat Packs



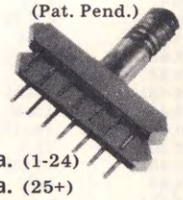
$2.95 ea. (1-24)
2.75 ea. (25+)

(Pat. Pend.)

Easy removal of D.I.P.'s whose leads have been bent or clinched over (by machine) place the hot tip on the solder covered Flat Pack of DIP Leads. The leverage provided by the tip—Lift the leads into an upright position. In the case of a Flat Pack—The back of the blade edge is used to melt the solder and wick it away from the leads.—Diameter of the Shaft is 3/16"—should be used w/40 unit iron

#4922A - 4922 APERTURE CLEANER

(Pat. Pend.)



4922A **$8.95 ea.** (1-24) **7.95 ea.** (25+)
4922 **$7.95 ea.** (1-24) **6.95 ea.** (25+)

In P.C. boards the lead holes are often clogged after DeSoldering. —Now—the 4922A Aperture Cleaner will clear the clogged holes.
The Aperture cleaner heats the individual area without danger to the board, pushes the solder out. —Shaft Diam. 3/16" use with 45 watt iron.
The 4922A - Accomodates 14 & 16 pin units
The 4922 - is a 7 pin single bar unit that can be used of carbon stack resistors, etc:

ALL PRICES SUBJECT TO CHANGE F.O.B. PHILADELPHIA